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OF

MEDICINE AND SURGERY:

EDITED BY

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THE

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OF

MEDICINE AND SURGERY.

JULY, 1840.

ART. I.—*Remarks on Statistical Medicine, contrasting the result of the empirical with the regular practice of Physic, in Natchez.* By SAMUEL A. CARTWRIGHT, M.D., of Natchez.

I HAVE witnessed two very different eras in the practice of Medicine in Natchez. In the first, the practice was confined to physicians, who had been regularly educated for that purpose, and the doors closed against all species of empiricism. In the second, the practice has not been confined to physicians properly so called, but fully and freely laid open to all kinds of quacks and ignorant pretenders. I am now about to test the results of the practice of medicine in these two eras,

standing as I do as a link between them, by the unquestionable facts of statistical medicine.

Statistical medicine or political arithmetic, as it is sometimes called, is that searching department of our science which separates the ore from the dross. It melts down and consumes the scaffolding which elevates empiricism, ephemeral success and accidental popularity, into high places. It undeceives the public by substituting for the caprices of the credulous, the partial and the prejudiced, the unerring results of time and truth. Statistical medicine furnishes the key which opens to public view in a manner the most convincing, simple and summary the actual results of the regular and empirical practice. The doctrine of annuities, successions, reversions and life assurances, are all founded upon the truths afforded by statistical medicine. The facts, which it discloses in regard to the practice of medicine in this city, are well calculated to make every member of this society proud of the profession to which he belongs and of the noble science to which it pertains. They show that the syren voice of the empiric is not to be trusted. They prove that there is no short road to knowledge in medicine—no safety for the afflicted, but in the counsels of those who have patiently climbed the rugged hill of science—no reform to be found by descending lower, but by climbing higher.

The excitement, which of late years, has been kindled throughout the United States against the medical profession under the popular catch word "*reform*," not only struck at physicians, but at some of the most valuable medicines of the materia medica. The medicines, most commonly used by physicians, particularly all the mineral preparations, were denounced as poisons, and pnysicians were represented as a set of men who followed the avocation of poisoning their fellow

citizens for mere gain, or from a species of infatuation, and so far from being useful to the public were more mischievous than an equal number of assassins or highway robbers. The excitement was fanned into a flame, with so much zeal, by the manufacturers of nostrums and patent medicines, that many ignorant, but in some instances good meaning persons, were stricken with a species of fanaticism, believing themselves called on to go out into the world to bring about a reform in medicine. Cobblers left their lasts, blacksmiths their anvils, the barber threw aside his shaving-brush, and even grey headed tailors jumped down from the board to become reformers in physic. For some time our strict laws against empiricism kept the reformers out of Natchez. At length, from causes not necessary here to mention, our laws against empiricism were virtually annulled. Very soon afterwards no less than half a dozen reformers, full of zeal, made their way into this city and chose it as the place of their permanent residence to carry out a reformation in medicine. They had never studied the science they came to reform, nor had they ever acquired the elementary education necessary to enable them to begin the study. But their lack of knowledge only made them the louder in denouncing physicians and their remedies. They were particularly hostile to calomel and the lancet. The one, they accused of being in all cases a poison, and the other of being at all times unnecessary and pernicious. They excited the hopes of the afflicted and prevailed on the credulity of the weak, by puffing the many miraculous cures, which, the "reformed system" was said to have effected. But in regard to the more numerous tribes of curable diseases, which the reformed system failed to cure, they put the finger of silence upon their lips. All those cases which baffled the best directed efforts of the regular practitioners,

the empirics adduced as witnesses to prove the imperfections and uncertainties of the healing art, thereby endeavoring to shake the confidence of the public in the physicians and their remedies. Many persons who did not become converts to the reformed system, were nevertheless so far influenced by the sophisms, dogmas, and misrepresentations of the empirics, as to lose a large share of their confidence in the regular physicians and failed to make application in due time, for fear of being bled, or having to take calomel or some other drug which the reformers had so repeatedly denounced as poisonous.

I am now about to turn statistical medicine upon the reformers. It is the spear of Ithuriel. The physicians of Natchez in ten years, from the 31st of December, 1823, to the 1st of January, 1834, have lost in all the population, including strangers, 641 patients. In the mean time 337 deaths are recorded not certified by any physician. The whole number of deaths in ten years being 998. This is less than 98 deaths per annum. Estimating the population at an average of 3,000, which falls short, rather than exceeds the true amount, the average mortality in the ten years would be only one in every 30.6-10 per annum. From the facts heretofore contributed to statistical medicine it is known that the average annual mortality of some of the principal cities of the world is much greater than this. According to Dr. Hawkins of the Royal College of physicians, the annual mortality of Naples is 1 in 28; Vienna 1 in 26; Madrid 1 in 29; Rome 1 in 25; Amsterdam 1 in 24. The mortality in all these cities being greater than that of Natchez. According to the same authority the mortality of Paris, Lyons, Strasburg, Barcelona and Nice is from 1 in 31 to 1 in 32, very little less than that of Natchez. In Philadelphia in the year 1832, there were 6699 deaths re-

ported out of a population of 188,397, making the average mortality of that city about 1 in 29.3-10 greater than the average mortality of Natchez. During a period of ten years from 1820 to 1831, the mortality of Philadelphia has varied from 1 in 30.5 to 1 in 42.9. During the same period, the average mortality among fifteen or sixteen thousand negroes in Philadelphia has been 1 in 21.7. According to Dr. Emerson, who has collected much statistical information, Philadelphia is one of the healthiest cities in the United States, and far more healthy than London. Owing to the cupidity of the English government which taxes both the cradle and the grave, the average mortality of Great Britain and the principal cities in it cannot be very correctly ascertained. A large number of births and deaths are not reported, in order to avoid the tax which is levied on all records. The dissenters keep few or no records of births, deaths and marriages. Their records are not received as evidence, consequently the business of registering is monopolized by the parish clerks of the established church. But even with this deficiency, without making any allowance for the unregistered deaths, the average annual mortality of Natchez, during a period of ten years, has been less than the average mortality of London during a period of ten years. The mortality of London from 1790 to 1801 was 1 in 29.3-10. It is somewhat less at present. The average mortality of England and Wales during a period of thirty years, from 1790 to 1821, has varied from 1 in 37 to 1 in 57. In Paris, according to Villerme, the average mortality from the domicil, not including the deaths which occur in the hospitals, (being about one third of the whole,) is one in 58 in those parts of the city inhabited by the wealthy class of citizens, but in the 12th arrondisement which is inhabited by the poorer classes, it is 1 in 24.8-10. Marobale estimates the

mortality of France during a period of twelve years from 1817 to 1829, varying from 1 in 27.3-5 to 1 in 53.5. But Napoleon contributed some very valuable and correct information to statistical Medicine. He caused the inhabitants of several departments of France to be accurately enumerated. Officers were appointed with ample powers to make a full and fair registry of all the births and deaths, and to guard against errors from ingress and egress. His object was to learn the natural increase and decrease of the population in order to make it serve as a comparison for the rest of his empire. The departments enumerated contained 2,037,615 individuals—203,102 of whom died in three years—making the annual average mortality in that part of France 1 in 30, being a small fraction greater than the annual average mortality of Natchez for ten years. Thus we find ten or a dozen physicians located in a hot and insalubrious climate, a large portion of the population not being natives or inured to the climate, contending with two yellow fevers, an epidemic cholera, measles, whooping-cough, scarlet fever and small pox; yet under all these disadvantages, the average mortality, during a period of ten years in succession, has been *less* than the average mortality of a large part of France in one of the most salubrious climates in the world—*less* than the mortality in that very portion of France, in which Napoleon had the average correctly ascertained in order to make it a standard of comparison for the rest of his empire—*less* than the mortality in Naples, Madrid, Vienna, Rome and Amsterdam—*less* than in London during a period of ten years—*less* than in Philadelphia during the year 1832, and not much greater than the average mortality in any other town, city or country—no greater, not even as great, if due allowance were made for the deaths which occur among the non-resident population.

More than half the deaths in the Natchez bills of mortality occur among strangers who are not enumerated in the census. If these were subtracted the average mortality of the citizens of Natchez during the whole period of ten years would not exceed 1 in 61 per annum; a less degree of mortality for so long a period than any other town or city in the United States can boast of. I have computed the population of Natchez from 1823 to 1834 at an average of 3000—I believe it however to be more. In 1830 when the population had got to its lowest point, and at a season of the year when the town contained the fewest inhabitants, an actual enumeration, by the officers of the United States government, gave 2789 resident citizens. The bills of mortality in 1830 in a population of 2789 make the average mortality for that year only 1 in 34.8-10. Those acquainted with the history of Natchez know that it gradually decreased from 1823 to 1830, when it slowly increased until 1833, and then in less than twelve months nearly doubled its former population. But to make the lowest enumeration the basis of this calculation, the average mortality, during ten years, would be only 1 in 28.5-10, including the whole of the deaths among strangers, including all still born children, and also including the deaths among from five hundred to a thousand negroes annually brought to this city for sale, prior to the total interdiction of the trade by the legislature of Mississippi in 1836. This would give a less mortality than that of Naples, Vienna, Rome, Amsterdam, Edinburg, Dublin, and at least three fourths of London and Paris, and considerably less than that part of Philadelphia inhabited by negroes.

But how happens it, that the average mortality of Natchez, during a period of ten years, has been so small? How happens it, that while in all other places from 1 to 21 to 1 in 53

of the inhabitants have died annually, in Natchez only 1 in 61 of her citizens, for ten years in succession, has perished annually, and only 1 in 30.6 including strangers and boatmen of which she has always had such great numbers? These astonishing results are not owing to any mistake. All the deaths which occur are faithfully registered by the sexton and reported to the city council. The sexton is bound, under a penalty of fifty dollars for every case of omission, to register and report every death. The population is not estimated too high, because in the year 1830 when the census was taken, by comparing the bills of mortality of that year with the exact population returns, the average mortality is found to be considerably less than the computed average for ten years. The people at a distance, hearing of so many epidemics in Natchez, naturally supposed that the mortality must be very great, and that human life was less secure than in almost any other place. But facts of the most indisputable kind prove that Natchez, in ten years, under the most discouraging and disadvantageous circumstances, lost a fewer number of her citizens by death, in proportion to her population, than almost any other town or city in the civilized world. The reason of so gratifying a result is as plain as the noonday sun. Natchez, during the ten years mentioned, *protected and encouraged science, and science protected and guarded her citizens.* The citizens of Natchez, during these ten years, were protected by strict laws against murderous quacks and empiricism of all kinds. The whole population had confidence in the medical profession, and owing to this confidence, *made timely application for medical assistance,* whenever they found themselves afflicted with any malady whatever. Other towns and cities may have had as good physicians, but the influence of empirics, the ignorance of the people, and their want of confidence

in the healing art, besides the great numbers, in Europe, who perish *for the want of bread* and the comforts and necessaries of life, have co-operated to make the healing power and beneficial influences of the medical profession less diffused, felt, and appreciated. But in Natchez, situated in the most favored spot of the most favored land, where plenty and abundance abound, where every inhabitant, bond or free, rich or poor, young or old, has all the solid comforts and necessaries of life at all times at command, the benefits and blessings of the science of medicine were dispersed and diffused throughout her whole population, until the subtle wiles of crafty and designing empirics and pretended reformers, impaired the confidence of the public in the regular medical profession. Leaning with confidence on the arm of science, the citizens of Natchez passed through two yellow fevers, an epidemic cholera, whooping-cough, measles, scarlet fever and small pox, besides the other diseases incident to the climate, and in ten years a fewer number of them perished, in proportion to the population, than in any other town or city from which we have any authentic results. The good effects of confidence in the medical profession, and the benefits to be derived from timely application for medical advice, were clearly demonstrated during the epidemic cholera, which visited this city in May and June of 1833. While in Paris, and many other cities, the ignorant inhabitants, goaded and worked upon by designing empirics, and the venders and fabricators of nostrums, and secret medicines, were accusing the physicians of having poisoned them, consequently refusing and disdaining medical aid and dying by thousands, the good people of Natchez were every where seeking timely medical assistance. The consequence was, that the epidemic, out of the whole population of Natchez in two months, May and June, including strangers, and negroes

brought here for sale, only carried off forty-three individuals. Whereas nearly this number died in a single day in many villages and towns of no greater population, wherever the inhabitants abandoned their physicians and looked to empiricism and to nostrums for safety.

I have thus attempted to show Natchez trusting in and wisely protecting science during the long period of ten years—through all this long lapse of years science being triumphant, amidst circumstances calculated to desolate and depopulate any other city. But it is now my task to review the picture and to exhibit Natchez during a period of four years and nine months—a period, with the exception of three months in 1837, remarkable for its health and entire exemption from epidemic diseases. I will present her to the reader—not leaning upon the arm of science—not confiding exclusively to it—not trusting in it—not protecting it by wise legislation, but letting it go, to follow after ignorant, presuming and fanatical empirics, and seeking safety in the patent nostrums of ignorance and fraud. Before the termination of 1833 the laws of Mississippi, which protected the science of Medicine and guarded the people against ignorant presumers and pretended reformers, were virtually annulled. By the first of January 1834 a host of empirics had made their way into our city, and commenced in good earnest, what they called a reformation in medicine. They first began their operations by using every artifice to destroy the confidence of the public, in the virtue of those remedies and means, which the accumulated experience of ages, has found to be the most effectual in the treatment of a large class of diseases—particularly such as occur in warm climates. They used great and unwearied exertions, not only to prejudice the public against most of the medicines which physicians employed, calling them poisons, but they

endeavored to destroy public confidence in the physicians themselves and to bring contempt and disrepute upon the regular exercise of the medical art. So great was their zeal, they succeeded in weakening public confidence in the medical profession in a greater degree than could have been expected in so intelligent a community. Some good citizens of Natchez and its vicinity they entirely alienated from it. In some instances they even succeeded in turning those, who owed their lives to the scientific practice of medicine, altogether against it. The natural effect of debility and old age were artfully attributed to the influence of calomel and the lancet. Deaths, which no human means could avert, and which must occur while man is mortal, were said to have been occasioned by poisonous drugs. The more numerous cases, which *got sound and well* under the use of the *very same* drugs, were overlooked. Nothing was likewise said of the many remediable cases which proved fatal under the empirical practice—but the welkin was made to ring with every case which got well under it, or which recovered in spite of it.

I now come to apply statistical medicine to that portion of time which has elapsed, since half a dozen or more empirics have located themselves in Natchez to carry out, what they call, "a reform in medicine." In other words, I am now about to test the pretended reformation in medicine by the unerring results of time and truth.

But first I propose to follow up the practice of the regular physicians. A considerable part of the population, generally embracing the more intelligent citizens, were not seduced by the empirics, but continued to employ as formerly, the regular physicians. During the last four years and nine months, omitting the deaths which occurred during the period of the epidemic of 1837, the regular physicians lost 523 patients.

Admitting that the population of Natchez, since the 1st of January 1834, has been double what it was during the ten years preceding 1834, the number of patients which have died under the care of physicians, during a period of four years and six months, would, if the population has actually doubled itself, be 566; provided their practice was neither more nor less successful than the practice of the physicians of the ten years preceding 1834. If the epidemic be excluded, fewer persons have died since the 1st of January 1834, under the treatment of regular physicians, than did previously. But if the epidemic of 1837 be included in the estimate, 84 more persons have died under the regular physicians, in the last four years and nine months, than the proportional number of deaths which occurred in the practice of the physicians who preceded them. Thus, if the physicians, during a period of ten years in a population of 3000, lost 641 patients, how many, in the same ratio, would die in a population of 6000 in four years and nine months? The relative proportion would be 609. But 693 is the number reported. But in the ten years from 1823 to 1834, besides the 641 patients reported by physicians, there are 337 unreported cases, or cases reported by persons not belonging to the profession. These 337 unreported cases were partly composed of strangers brought here in a dying state from New Orleans; partly of accidental deaths; partly of still born children; partly of intemperate and houseless strangers; partly of persons who refused medical advice, and partly of omissions in the attending physicians to report all the deaths which occurred in their practice. If a population of 3000, in ten years, gives 337 unreported cases, how many unreported cases would a population of 6000 give in four years and nine months. The number would be 320. But the actual number of unreported cases of the last four

years and nine months, as proved by the sexton's books, is 622. If 320 be taken from 622 there will remain 302. Therefore, 302 individuals in the last four years and nine months, have either been directly sacrificed on the smoking altars of steam, or had their confidence in the medical profession so much impaired by designing empirics as to forego the advantages of science, and die of remediable diseases. Lest it be supposed that the great excess of unreported cases occurred during the epidemic of 1837, I have consulted the register kept by the sexton, and find that the whole number of unreported deaths, during August, September and October 1837, embracing the whole period of the epidemic, is only 70. By deducting 70 from 302 there remain 232 more unreported deaths in four years and six months (omitting three months for the epidemic,) than occurred during the whole period of the preceding ten years. The total number of deaths, which occurred in ten years, from 1823 to 1834, is 978. If therefore a population of 3000, in ten years, lose 978, how many deaths would occur in a population of 6000 in four years and nine months? The total number should be 929. But the actual number of deaths recorded in the sexton's books, the last four years and nine months, since the pretended reformation in medicine commenced, is 1315. The reformation, therefore, has reformed, in four years and nine months, no less than 386 individuals out of existence. But to put the matter in a plainer light—the average annual mortality of Natchez since empirics have divided the practice with the regular physicians, is no less than one death per annum in every 21.7-10 of the inhabitants: but to estimate the mortality on the actual population of 1837, when Natchez contained its highest population, 6000, it would be, 1 in 22.2; but in the ten years preceding this mixture of empiricism with the regular practice only one in

every 30.6-10 died per annum. During these ten years, the number who died under the care of physicians was about 1 in 47 per annum, and the number of unreported deaths during the same period was 1 in 89 per annum. But during the last four years and nine months, including the late epidemic, and including all the cases from the Natchez hospital, the physicians lost 1 in 41 per annum, whereas the unreported deaths of the same period were 1 in 45.7-10 per annum; nearly double the unreported cases of the former period, and exceeding the whole mortality occurring in the practice of the physicians during ten years. But it may be supposed, that the increased mortality of the last four years and nine months, may be owing in part to the greater number of persons who have settled in Natchez, and who have had to undergo that peculiar change called acclimation. It may also be supposed, that the comparatively small mortality of the ten preceding years might be owing to a greater proportional number of citizens leaving town, during the sickly months in the first period of ten years, than in the second period of four years and nine months. Plausible as these suppositions may be to account for the great difference of mortality during the two periods, a voice from the cemetery proclaims, that such is not the true reason. It is well known, that the fever of acclimation, or the stranger's fever, as it is sometimes called, never occurs in the winter or spring. It is likewise known, that no persons fly from town in order to avoid sickness in January, February and March. But what does the voice from the burial ground say? It says, that the total number of dead bodies conveyed there, during a period of ten years, from 1823 to 1834, in the months of January, February and March, was only 159; and that the number carried thither, the last five years in the same months, January, February and March, is no less

than 239. Half the time and twice the population ought to give the same results, as twice the time and half the population. If, therefore, the introduction of empiricism, and patent medicines into Natchez had added nothing to the mortality of the place, the aggregate number of deaths which occurred during the first quarter of each of the last six years, should not have exceeded the aggregate number of deaths which occurred during the first quarter of each of the ten preceding years. But they do exceed them, as far as 239 exceed 159. The difference, between these two numbers, gives the precise increase of mortality, during the months of January, February and March, since half a dozen or more deluded empirics made this city their place of residence and commenced, what they called, a reformation in medicine. The average annual mortality, taking these months as the standard, during ten years, was only 1 in 47. But no sooner did illiterate mountebanks make a lodgement in Natchez, than the mortality of January, February and March increased to 1 in 31.4-10 per annum. In the month of April, during the ten years between 1833 and 1834, the physicians lost 39 patients, and during the same time 11 deaths were unreported. The whole mortality for ten Aprils in succession was only 50. But since quackery has been let loose upon the people of Natchez, 85 persons have died during the last five Aprils—being 35 more than the proportional number of deaths that occurred before the empirics proffered their services to the good people of this city.

In other words, making April the standard, the average mortality would be only 1 in 50 per annum of the total population, including strangers, during a period of ten years. But since Natchez has been overrun by empirics, the mortality of the last five Aprils has increased to 1 in 29. 4-10 per annum.

The mortality which occurred in the practice of the physicians in each month of April for ten years, between 1823 and 1834, has been at the rate of 1 in 64. 2-10. The mortality which has occurred in the practice of the physicians of the last five Aprils has been at the rate of 1 in 65. 7-10—nearly equal as far as the physicians are concerned in both periods. Yet in the first period of ten years only 1 in 50 died, but as soon as quackery was introduced, 1 in 29. 4-10 died. It is worthy of particular remark, that the number of deaths reported by the physicians in both periods, not only in the month of April, but every other month of the year, is relatively very nearly the same. Thus, 39 deaths were reported by physicians in the ten Aprils of the first perod, and 38 in the five Aprils of the second period. But while the unreported deaths of the first period were only 11, the unreported deaths of the second period amount to 47. Again, during the first ten of the last fifteen Mays, Natchez lost in all 73 individuals; 40 reported by physicians and 33 unreported cases. But during the last five Mays, she has lost 99 individuals, 33 reported by physicians and 66 unreported cases, or cases reported by persons who are not regular physicians. During the last period the unreported deaths, or those which have been reported by persons not belonging to the medical profession, double the number of deaths reported by physicians; whereas before the introduction of quackery, a large majority of all the deaths were reported by the physicians. To sum up the matter, therefore—in January, February, March, April and May of the ten years preceding 1834, 293 persons died in Natchez; while in the same months for the last five years, 421 have died. In half the time, and twice the population, the number should have been the same. No less, therefore, than 128 individuals have unnecessarily perished,

or have been wantonly sacrified, since the first of January, 1834, during the five most healthy months in the year. Taking these five healthy months, as being the months best calculated to test the success of the empirical practice, as the months when empiricism is most popular, (diseases being the mildest, and the principle of life the strongest,) 128 individuals have died, over and above the number which did die in twice the time and half the population, before the empirical practice was introduced, and before public confidence was shaken in the medical profession. If these healthy months were made the standard of comparison, Natchez would lose 331 individuals in five years over and above the number she lost, in ten years and half the population, under the regular exercise of the medical profession, unmixed with quackery. The empirics will no doubt try to evade the issue by disowning the unreported cases, or may even lay them to the charge of the physicians. But the main and essential fact, *that the mortality of Natchez has greatly increased since they came to town and commenced a pretended reformation in medicine, will still stand in bold relief against them.* If they could prove that the physicians neglected to report all the deaths which occurred in their practice, the physicians, on their part, could prove that many of the cases they did report, had previously been subjected to steam, or that the sick had eked out the first period of their disease in the use of nostrums and quack medicines. The medical statistics of Natchez prove in the clearest and most undeniable manner, that previously to the introduction of quackery the annual average mortality for ten years in succession, embracing a very sickly period, rife with epidemic diseases, was much less, or at least very little, if any greater, than the average mortality of most other towns and cities in the world which are reputed healthy. But since the intro-

duction of quackery, the annual average mortality has greatly increased. To charge the increased mortality to the present regular physicians would avail empiricism nothing, unless it could blot out from the records of the city the diminished mortality under the regular physicians, before it was permitted to obtrude itself among them. The present physicians, and those of a former day drank at the same well of science. When the empirics came to Natchez the annual average mortality, including strangers, still-born children, and the deaths occurring among the negroes brought here for sale, was only 1 in 30. 6—and had been at this rate for the ten preceding years, while the mortality among the citizens proper did not exceed 1 in 61; but the very month in which the empirics commenced, in good earnest, to reform a science they had never studied, the mortality suddenly increased to one death in every 21 inhabitants per annum, notwithstanding that Natchez had, in the mean time, ceased to be a market for the sale of negroes, which formerly added very considerably to the bills of mortality, not only from the deaths which occurred among them, but likewise from the contagious diseases, as measles and whooping cough, which they almost annually introduced into the city.

The important fact, that the mortality of Natchez has greatly increased since the introduction of quackery, cannot be evaded by saying, that I have rated the population too high at one period and too low at another. The population in 1830 was known to be 2789. The number of deaths which occurred in that year is likewise known to be 80—which would make the average for that year only 1 in 34. 8-10. The population in 1837 amounted to 6160. The number of deaths which occurred in nine months of that year, omitting entirely the deaths which occurred during the period of

the epidemic in August, September and October, amounts to 186—this would give an average mortality of 1 in 24. 4-10 per annum. But if the population since the empirics have been permitted to practise medicine in Natchez, be put at the highest enumeration, and at the lowest enumeration previously to their introduction, still would it be found that the mortality of the city, since the introduction of quackery, has increased in a manner sufficient to demonstrate that the city has gained nothing by the pretended reformation in medicine, but has lost much. I do not say, nor do I believe, that the empirics have actually carried a sufficient number of patients through a full course of steam and No. 6, to account for the great increase of mortality; but I do say, and believe, that the war they have waged against the known and well-tried remedies of the Materia Medica, and the measures they have taken to destroy public confidence in the medical profession, are nearly sufficient of themselves to account for the increased mortality, without taking into the estimate those who died under their scalding treatment.

I owe to the empirics, *en masse*, a public exposition of my opinions in regard to the "reformed system," for having wantonly and wilfully spread, far and wide, a report which was most industriously circulated, that I had, in a good degree, become a convert to their doctrines. This, like many other reports, I viewed as a trick in their trade of deceiving the public. It is true I have used red pepper and lobelia in my practice, but I have used these articles of the Materia Medica in my practice before I ever heard of steam doctors or botanical reformers. If the fanatic Thompson had taken a fancy to calomel and the lancet, instead of red pepper and lobelia, I should not have thrown aside calomel and the

lancet for fear of being classed among his disciples by employing the remedies which he and they abused.

The empiric is known by his nostrums and secret combinations, and by his ignorant and indiscriminate use and application of the known and established articles of the Materia Medica. It is not the medicine, but the man, who ignorantly uses the medicine, which constitutes empiricism. No one medicine can be proper in all cases of disease. The empiric treats all cases, however different, very nearly alike, with the same articles, whether vegetable or mineral substances, whether calomel or red pepper and lobelia; but the physician draws his remedial agents from the animal, vegetable and mineral kingdoms, he knows, or should know, the properties and virtues of all; consequently in the treatment of the various diseases, he makes such selections of medicinal agents, for every individual case, as the lights of science, conjoined with his own and the experience of former ages and other countries, may, in his judgment, after a careful examination of the case, seem to be the most appropriate.

In the collection and publication of the medical statistics of this city, my first object was to bring about some action, at home, which might prevent any further and unnecessary sacrifice of human life among my neighbors and fellow-citizens. But I have supposed, that a full and free inquiry in regard to this important matter by the profession in other quarters, might be attended with happy results, and I trust that my essay will be followed by other expositions on the same subject, which will at length open the eyes of the community to the extent and enormity of this evil. It may not be in the power of the profession to induce legislatures to enact laws for the suppression of empiricism; but it is their duty to inform the public as to the evils of quackery. These statis-

tics, it is not in the power of empirics, or of those who countenance them, to gainsay or resist; and if they be extended by physicians in other places where the *"reforming system"* has been in operation, a mass of testimony will be collected which, in the end, must exercise a controlling influence upon public sentiment. It is by the exhibition of such facts as have been presented in this paper, that the judgments of men are to be convinced.

ART. II.—*Practical Observations on the use of Sulphate of Quinine.* By JOHN W. MONETTE, M.D., of Washington, Mississippi.

IN the 13th volume of the "American Journal of Medical Sciences," I gave my views of the medical properties of the sulphate of quinine, as a remedy in febrile affections, and of the proper cases for its use in the treatment of fevers of the remittent and intermittent type. In the article referred to, it is contended that the sulphate of quinine is a powerful *febrifuge* in fevers with increased action and tone, and acts somewhat analogously to antimony and other contra-stimulants; that it is by no means a direct stimulant to the circulation or nervous and cerebral energy; but is calculated to reduce the tone of both: that it is not by any means a tonic in the general acceptation of the term: that it is not adapted to the treatment of fevers attended with direct debility: nor to cases of debility without fever; and that it will produce pernicious effects in such cases if administered freely.

I propose in the present article to offer a few additional remarks in illustration of my views of the therapeutic proper-

ties of quinine. In this I shall cite a few cases and base my remarks upon them with the sole design of illustrating the views which I entertain. I am convinced, that much temporary inconvenience if not injury is often caused to patients, laboring under autumnal fevers and other febrile affections, by an injudicious administration of quinine; and that this injudicious administration proceeds from a mistaken idea of its precise medical properties: especially from the belief that it is purely tonic or stimulant. Neither of these properties pertains to the sulphate of quinine, unless it be indirectly, by reducing the febrile action and diathesis. In febrile affections attended with an irritable condition of the nervous system, and exhausted vigour of animal action, quinine will be decidedly prejudicial. In these cases it increases the nervous irritability, impairs cerebral energy, and produces great precordial distress. I know several persons of nervous temperament who suffer so much from a single dose of quinine, that no persuasion would induce them to repeat it: one gentleman in particular is thrown into a perfect delirium by a full dose of quinine, even in the state of fever, and much more so in the absence of fever. Two cases came under my observation last summer in which death was caused in a few hours by only two doses of quinine. The patients were two black children, one five, and the other six months old. They were taken with a catarrhal bilious fever about the 10th of September, when it prevailed epidemically in this vicinity among the infants and children. These two infants had been sick four or five days, had taken eight or ten small doses of calomel, which had excited and kept up copious yellow and green mucous discharges from the bowels; and the general nervous and cerebral irritation was augmented, and the febrile action reduced to the irritable kind. At this stage I saw them; pre-

scribed mild demulcents, gentle anodynes, fomentations to the abdomen, and gentle saline laxatives after the irritable condition of the bowels was allayed. On the third day after I saw them, they were clear of fever and apparently in a fine condition for convalescence. In this condition, with a view of preventing fever, each of them took one grain of quinine and half a grain of Dover's powder at 2 o'clock, and repeated it at 5 o'clock. Soon after the first dose, the fever appeared to rise, the pulse became active and throbbing; the head hot, and pulsating, with general uneasiness. All these symptoms increased soon after the second dose; and became greatly aggravated about 7 o'clock, attended with partial spasms. One died at 9 o'clock, and the other in half an hour afterwards.

Remarks.—At the time the first dose of quinine was given, these children were in a fine state for convalescence without any medicine, and would in all probability have rapidly recovered under the occasional exhibition of a very small portion of weak brandy toddy, with a few drops of paregoric, or essence of peppermint in it; and with an occasional mild laxative. The quinine in very small quantities, one-eighth to one-fourth of a grain, might have been beneficial: but the condition of the little patients was not such as to bear a full dose. Adults in our country are sometimes, during convalescence from bilious fevers, in precisely analogous circumstances, especially females; and in them quinine administered in the same proportion would be almost as detrimental. But in them a consciousness of its pernicious effects would cause them to refuse its further administration. In such cases, if the tone of the system were not impaired, and if the nervous temperament did not predominate, the use of quinine combined with some aromatic would be applicable: but otherwise the infu-

sion of cinchona and ginger, or weak toddy is decidedly preferable.

The above is evidently the experience of M. Vulpes, of Naples, when he describes the sulphate of quinine as "more irritating than the cinchona." Yet Dr. Eberle, (Practice, vol. 1, p. 73,) in commenting upon the experience of M. Vulpes, says, he has never perceived such difference in the action of the two articles. Yet Dr. Eberle (Ibid, p. 76,) admits that he has seen pernicious effects from large doses in the cold stage of intermittents; and, that he suspects that certain cerebral irritations in a lady of delicate constitution, and in a lad, were attributable to its improper use. These effects I am confident will not be produced in the robust and the athletic, whether they have fever or not. Dr. Eberle however thinks quinine a good substitute for barks, and much more convenient when bark is rejected by the stomach. On this point I remark, that quinine will disagree with the nervous system as often as the bark does with the stomach; but the cases in which quinine generally disagrees, are those of persons of nervous temperament, and irritable condition of the nervous system.

Very little testimony of any kind in relation to quinine is to be obtained from Dr. Eberle's Practice of Medicine; and it is somewhat surprising that he does not recommend quinine as a remedy in fevers, either continued, remittent, typhus, or bilious. He recommends it principally in intermittents, and even in those cases, he appears to be without any definite views as to its specific action, other than as a tonic or substitute for bark. Throughout the whole work he confounds the two articles, cinchona and sulphate of quinine, as possessing the same properties, and applicable in the same cases. There is no man whose authority in medicine I respect

more than that of Dr. Eberle, in matters pertaining to therapeutic practice: but in regard to the use of quinine I am satisfied he has not made such use of it as would enable him to speak of it in clear and definite terms.

To illustrate my views of the pernicious effects of quinine in persons of delicate constitution, nervous temperament, and debilitated condition, I will give the following case, which came under my observation in the spring of 1837.

Case.—Mrs. L. F. æt. 28 or 30 years, of temperament lymphatic and nervous, strongly marked. During the latter months of gestation with her third child, she became greatly afflicted with deranged functions in all the organs of assimilation; such as were indicated by pyrosis, cardialgia, anorexia, and even bulimia, alternately, and an inability to retain anything on her stomach. These symptoms became so aggravated towards the termination of gestation, that for six weeks previous to her accouchement, she was confined to her bed and room. Various antacids, carminatives and such like remedies were used without relief; venesection was used freely several times, and, to say the least of it, without benefit. She became weak, pale, and emaciated, although with a kind of œdematous fulness of features. In this state the pulse became weak, quick, and irritable; the brain became irritable and very sensible to the slightest degree of light and sound. In this state she was delivered of a fine healthy son. She passed through the stage of labor without any untoward circumstance, but her condition became daily more precarious and distressing. I first saw her on the eighth day after her accouchement, in the following condition: viz.—The lochiæ were profuse and watery; there was a profuse secretion and frequent discharge of thin yellow bile; the pulse weak, quick and irritable; the stomach frequently rejected all ingesta;

the senses of sight and hearing were so acutely sensitive that the room was kept perfectly dark, and the lightest walking in the stocking feet over a carpeted floor gave her great pain, as did also the most moderate whispers in the opposite side of a large room. During the last eight days she had been under the constant attendance of two physicians, and had used freely of magnesia, blue mass, calomel to free ptyalism, besides bloodletting twice before the mercurials. Sulphate of quinine was also alternated, with occasionally a small portion of morphia. Nevertheless, all the distressing symptoms had become daily more alarming; and when I first saw her she was unable to raise her head from the pillow; the tongue and face as pale as marble. The last medicines which she had taken were small doses of quinine and blue pill, to the exclusion of the small portions of morphia which she had been taking previously.

In this state I advised the discontinuance of the blue pill and quinine, and to substitute aromatic stimulants and morphia in small quantities; but to satisfy the physician in previous attendance I consented to continue the quinine in doses of 1 gr. every six hours, besides other remedies. Having remained three days and nights without intermission, I had the best opportunities for observing the effects of every article given. About one hour after each portion of the quinine was taken, although in so small a quantity, the nervous irritation became aggravated. The portion of quinine was occasionally omitted to see whether the accompanying change would take place; but the aggravated state of nervous sensibility and irritation did not occur without the quinine, and it was finally dispensed with entirely. Having, in cases somewhat similar, obtained good effects from the oxide of bismuth, I determined to give it a trial in this case. I accordingly gave a powder

composed of 3 grs. ox. bism., ½ gr. ipecac and 1-6 gr. morphia every three hours until the cerberal and general irritation was in a measure composed, and afterwards *pro. re nata.* The result for several days was such as gave the most flattering prospect; although about ten days afterwards a change occurred in her disease, and she died in my absence.

Remarks—I have given this as a minute detail of a most aggravated case of that kind of disordered action, in which quinine is decidedly pernicious. From my observations in this and other cases, I am convinced that had this patient taken 3 grs. of quinine every three hours, instead of 1 gr. every six hours, it would have terminated her existence in a few hours.

Dr. Cartwright seems to have used quinine as a direct febrifuge in 1823–'4–'5, although that was the experimental period of quinine, when it was generally considered only as a tonic. In his essays, published in the Medical Recorder,* he appears to have used it as a febrifuge, to sustain febrile action, and to develope suppressed excitement, especially in pneumonia biliosa. However, in some cases it appears to have had a pernicious effect throughout its administration. Mr. Dearborne's case is one of these. See Medical Recorder, vol. x. pp. 48 and 49, &c.

The direct effects of quinine in improper cases, is to produce a collapse of cerebral and nervous energy—a want of nervous concentration, if the expression may be allowed, a diminution of voluntary action, both mental and corporeal; a confused state of intellect, attended with *tinnitus aurium*, giddiness, vertigo, pain in the head; a feeble, quick or irritable pulse, cerebral irritation, and nervous tremors in the mus-

* Volume X.

cular system. Whether these effects be produced by cerebral congestion, or by a direct diminution of cerebral energy, is of no importance to enquire. The fact is all that is necessary to be known in regulating its administration.

Congestive fevers appear to result from a collapse of nervous energy, an overwhelming of the whole recuperative powers of the system, whence all efforts to establish excitement and reaction by the powers of animal life unassisted, fail, and the fatal collapse ensues. This powerful impression results from the greater force of the morbific agent, or from the coincidence of a greater number of auxiliary circumstances attending the condition of the individual attacked, or from the greater degree of susceptibility of the system to the morbific influences, and the less vigorous recuperative powers of constitution in the individual attacked. In strong athletic constitutions, with strong powers of reaction, the excitement becomes open and general; and when no organ is implicated by previous disease there will be very little if any local determinations. In these constitutions if there be partial oppression of circulation, quinine alone or combined may be useful: but in the former it is injurious. In the former, the tone, or the recuperative powers of the system are only oppressed, not direcetly reduced; hence it is in such cases generally, that we find quinine has been used with benefit in the early stages of fevers, before local determinations and engorgements were established, or the functional action of any organ had become permanently deranged. In these cases, we conceive the poisonous ferment in the system to be neutralized to a certain extent, before the establishment of those functional and structural derangements, which, until removed, in a great degree, preclude the use of quinine.

Thus in cases of great gastro-intestinal irritation, indicated

by a clean, dry, smooth tongue; or a tongue dry, red, and chapped, or dry, brown, and rough, the quinine is useless if not injurious; because the existing intestinal irritation is sufficient to keep up a low grade of fever, even were the original exciting causes withdrawn: and the irritated mucous surfaces, in contact with the quinine, would be further irritated by that medicine, whereby the general sum of the morbid symptoms would be aggravated. This grade of gastro-intestinal irritation scarcely ever presents in the first stages of any fever, but supervenes in continued febrile action, where the mucous membrane receives additional irritation from the repeated irritating effects of purgatives, or other acrid remedies. In these cases quinine unquestionably accelerates that stage called low typhoid fever, accompanied by cerebral irritation and incoherent delirium.

The proximate cause of fever appears to be some essential morbific action or ferment in the circulation, and is modified in its action and operation upon the system by the circumstances of climate, locality, temperament, habits, and other extrinsic circumstances. Other contingent circumstances often cause the particular location of the disease upon particular organs or tissues. The peculiar grade of action in each of these organs and tissues is often modified, in like manner, by circumstances which elude our observation. In a sound constitution, where no organ is more disposed to yield than others, the action is confined to the general circulation and secretory organs, and developes itself in what is termed idiopathic fever. Yet in this grade of fever, a depravation of fluids and secretions often supervenes; and these secretions again operate as new exciting causes of fever, or new sources of morbid irritation.

Although *quinine* is a strong febrifuge—an antidote to this

morbific *virus*, yet its action is confined to the subduing of that morbid action, while there is no local source of irritation. It will not remove morbid and acrid secretions that proceed from morbid action, and serve as a new source of irritation. It will not remove inflammation, which may have resulted from general excitement and the predisposition of a weak organ, in any of the great cavities. It will not remove morbid sensibility and irritability which has supervened in any organ or tissue, from the irritation of morbid secretions, or from local determinations. It will not reduce general febrile action proceeding from the primary morbific agent or miasm, while at the same time all these new sources of febrile irritation are in full operation. Hence, in using sulphate of quinine in fevers, it becomes necessary to reduce, in some degree, the violence of arterial action by the different modes of depletion and narcotics; to remove the irritating secretions from the alimentary canal, and allay with narcotics the irritation already excited. It is necessary to relieve the determination to any particular organ, by antiphlogistic remedies and counter-irritants. It is necessary to develope the circulation and produce open excitement, where it is oppressed and attended with local congestions. It is necessary to allay by opiates and anodynes, functional excitement or irritation, which may be superinduced in the train of febrile symptoms; such as profuse secretion of bile, or profuse serous secretion from the mucous surfaces of the intestinal canal. In short it is necessary to place the system in a state of simple idiopathic fever, as nearly as possible, before the free administration of *quinine* will be beneficial. Upon this principle we see why this medicine may be given without producing any beneficial results, even where it does not produce positive injury.

Upon this principle we insist that the sulphate of quinine

is not a tonic strictly speaking; although it may apparently fulfil the office of a tonic in certain cases, where a slow febrile action is the principal cause and source of the debility. In such cases quinine will appear to act as a tonic; while its real action is to reduce the febrile action concealed in the system, and permit the recuperative powers of the system to restore the natural action in all the functions deranged.

Dr. Perrine, from Campeachy, in a letter to Dr. Drake, published in the Western Medical Journal, appears to entertain the same views of the febrifuge properties of quinine, that we do. In relation to the opposition shown to large doses of this medicine, he says, neither will they "believe that ten grains of quinine will reduce an elevated pulse, and moisten a dry skin, while one grain-doses will irritate both: neither can they believe that quinine can be used like calomel in fevers, in connexion with bleeding and other antiphlogistic remedies." (See number for January, 1834, p. 330.) As to his views in relation to the "irritation of large doses," as well as his views in regard to the use of quinine in the malignant cholera, I am compelled to differ in some respects. Yet he appears to have ascertained, that the properties of sulphate of quinine are essentially febrifuge—and adapted to the treatment of fevers of open excitement.

December, 1839.

ART. 111.—*Report of a case in which a Testis was found in the Abdomen of a man post mortem.* By GEORGE W. BAYLESS, M. D.

In making an autopsical examination, at the Louisville Marine Hospital, May 23d, 1840, of the body of Dunham, a boatman, aged 27 years, large and muscular, we found in the left iliac region, about an in inch and a half from the internal abdominal ring, a testis, about one inch in length, three-fourth's of an inch in breadth, and half an inch thick. From an inspection of its exterior, its organization seems to be perfect. We made no dissection, being desirous of preserving it entire *in situ*. It has a complete peritoneal investment, and is attached by a peduncle of this membrane to the walls of the abdomen, obliquely upwards and backwards from the ring. It hangs loosely in the cavity of the abdomen, and seems to have been arrested in its descent, by an adhesion of, what would have been, if it had descended into the scrotum, its anterior convex edge, to the side of the fundus of the bladder. The adhesion is firm, and almost ligamentous, in its appearance; and there being no trace whatever of recent inflammation, it is fairly inferible, that it was contracted when the testis was in its passage from its original situation to the scrotum. This supposition is strengthened by the fact, that the epididymis is drawn off about three-fourth's of an inch from the body of the testis, seemingly by the contraction of the gubernaculum testis, which is firmly adherent to it. This last fact, the separation of the epididymis from the body of the testis, not only renders it probable that the descent of this organ was arrested by a mechanical cause, as the adhesion above mentioned, but it also stregthens the sup-

position of the contractility of the gubernaculum, by which the transition of the testis is thought to be effected. The vas deferens leading from it is about the same size and appearance as that of the other side, and takes its ordinary course by the side of the bladder to its vesicula seminalis, which is about a third or half an inch shorter than its fellow of the opposite side, and is also only about two-thirds of its breadth.—The internal abdominal ring, canal, and external ring are large, permitting, without difficulty, the passage of the little finger, and terminating in a *cul de sac* lying within the scrotum, about two inces long and an inch and a half wide. Hernia seems to have been prevented by the testis' covering the mouth of the internal ring, its peritoneal pedunclе being sufficiently long to allow its assuming that position, where, indeed, it was found, and seems most inclined to lie.

All the corresponding parts of the opposite side are perfect in their organization and development, and all occupy their ordinary situations.

No history of the indidvidual could be obtained, but from his athletic form, and the full development of his generative organs, there can scarcely arise a suspicion, that impotency existed in his case. This fact possesses some value in its bearing upon legal medicine, and as connected with the question of castration, which sometimes comes up in courts of justice.

The specimen has been placed in the Pathological Cabinet of the Medical Institute of Louisville, where it may be seen.

June, 1840.

ART. IV.—*A Case of Paralysis of the Bladder terminating fatally.* By F. WALTON TODD, M.D., of Port-Gibson, Mississippi.

DR. W. was called a few days since to see a negro man, who being delirious was unable to say what was the matter with him; and though he had a family it was not ascertained, that for several days he had not evacuated his urine. He seemed to be suffering intensely, and, in a way which was not intelligible, referred to some abdominal distress. Upon examination it was thought, that there was a preternatural distention of the urinary visicle, and a flexible catheter was introduced without difficulty; but no urine passed. A metalic instrument was then used, but with the same result; he was finally placed so that the water would gravitate, but all without effect. In a few hours he died, and upon examination the bladder was found immensely distended, with a thin, not unnatural fluid; the catheter which had been introduced was found to have penetrated the bladder successfully, which contained four or five pints of water. There were no traces of inflammation; no morbid appearances, within the bladder, prostrate gland, or urethra; no obstruction in the urinary passages, but a perfectly normal condition of the internal coat of the bladder and urethra. I look upon this case as one confirming the fact, that in paralysis of the bladder urine will often not pass by the catheter, without grasping and compressing the visicle, and sometimes cannot be drawn off except by paracentisis. I have since seen an analogous case reported by a Parisian writer to the Boston Medical and Surgical Journal, where M. Cruveilhier had no better success with the catheter unaided by compression.

June, 1840.

REVIEWS.

ART. V.—*Crania Americana; or a comparative view of the Skulls of various Aboriginal nations of North and South America: To which is prefixed an Essay on the Varieties of the Human Species. Illustrated by seventy-eight plates, and a colored map.* By SAMUEL GEORGE MORTON, M.D., Professor of Anatomy in the Medical Department of Pennsylvania College at Philadelphia; member of the Academy of Natural Sciences of Philadelphia; of the American Philosophical Society; of the Historical Society of Pennsylvania; of the Boston Society of Natural History, &c., &c. Philadelphia; J. Dobson, Chesnut street. London; Lumpkin, Marshall & Co., 1839. Letter press, p. 296, folio.

THIS volume is the product of a bold and somewhat original enterprise in the highest branch of natural science—we mean anthropology. And of that enterprise, wide and varied as are its scope and bearings, high its purposes, and important its aim, it is not unworthy. Nor does any thing perhaps contribute more to its attractiveness and value, than its simplicity and unpretendingness—its freedom we mean from self-glorifying theories and doctrines, and more especially from iron dogmas, and air-woven hypotheses. It consists almost exclusively of an immense body of facts, no inconsiderable portion of them new, collected in a laborious and protracted course of reading, observation, and multiform research, and neither misinterpreted, perverted, nor misapplied, in subservience to

the influence of preconceived notions. Instead of itself broaching or even propagating crude opinions, or giving existence and shape to any thing like a premature and ephemeral system, it aims at the ascertainment and confirmation of elementary truths, out of which, as imperishable materials, substantial and lasting opinions and systems may be hereafter constructed.

Dr. Morton, in the great work before us, has neither so restricted his scheme, as to fit it in all respects to the study of man, as *an individual*, nor so expanded it, as to suit it especially to that of mankind *as a single body*. He has given to it rather an *ethnographical* character—adapted it, we mean, to researches into the conditions, analogies, differences, and relative standing of mankind, as divided into *tribes*, *families*, and *nations*. And, if we mistake not, he has had, as a physiologist, the discernment to perceive, and the firmness and independence, as a man and a writer, to select and avow, the veritable ground, out of which those differences of human condition and standing essentially arise. In plain terms; without professing to be a phrenologist, and apparently, if not really, unconscious that he was so—and certainly without any predetermined intention to be either an advocate or an opponent of the new scheme of mental philosophy—under these circumstances, our author's production is as strictly phrenological, as any of the publications of Gall or his followers. And, as will appear hereafter, the entire and fast multiplying host of his facts, as far as they bear on the science, (and from their inordinate number, they might be called "legion") are expressly confirmatory of it. In no respect could its warmest advocates change them for the better, or even wish them changed—we mean as regards their phrenological bearing. In all time to come therefore, the "Crania

Americana" will be referred to, by enlightened anthropologists, in proof and illustration of the truth and importance of the discoveries of Gall. But to come into closer contact with our subject.

That the organic structure of the human body, in its aggregate capacity, is composed of a number of subordinate structures, is known to *every one.* And to the *anatomist* and *physiologist* it is known, that, of these subordinates, the nervous structure, including the brain and spinal cord, holds the highest rank. Though several of the others are as essential to its existence and the efficiency of its condition, as it is to theirs, it is notwithstanding so far the master tissue, as to control the others, and so far predominant in its general influence, as to give to man his native supremacy and fitness for empire, and place him at the head of the animal creation. In all the other structures which enter into his organism, the more perfect of the inferior animals are the equals of man, and in some of them his superiors. In the character of his nervous tissue alone he is pre-eminent. And, in full acknowledgment and demonstration of that pre-eminence, the phrenologist pronounces and proves the brain, which is but a portion of the nervous tissue, to be the *organ of the mind*—to be that instrument, or rather *array of instruments,* (for it is strikingly multiplex in its structure as well as in its functions,) by which alone the mind executes its purposes, and manifests its power. Nor, however different may have been the case, but a few years ago, does any *physiologist* now, who is worthy of the *title,* venture to question the truth of this position.

Such then is the foundation, (the supremacy we mean of the nervous tissue,) on which phrenology rests; and on the same foundation rests essentially the work we are examining; and from that consideration arise, in an eminent degree, its

interest and value. Wherefore? The answer is plain, and easily rendered. It is the difference in the size, form, and general character of the brain, the great nervous centre, which constitutes the leading and most important differences between the several races and varieties of the human family. And to that source does our author virtually ascribe them. True, he refers also to the distinctions created between men by difference in size of body, complexion, hair, features, and personal configuration. These however, he justly considers as but minor points in the production of dissimilitudes. For that difference, which, being itself the chief one, imparts a broad and abiding distinction of constitution and character, he looks not to the blood-vessels, muscles, or bones, nor yet to the viscera of the abdomen or thorax, (though they also are important elements) but to the volume, form, and condition of the brain, as manifested by the size and configuration of the head. Hence the title of his book—"CRANIA AMERICANA"—tantamount, in its import, to CEREBRA AMERICANA.

But in collecting his materials for the volume before us, Dr. Morton did not confine his draughts to the aboriginal tribes and nations of America. Far from it. He framed and filled them under the influence of a more catholic spirit, and with less restricted views, and addressed them to sources much more extended, and more abundant in means. Conformably to this arrangement, he commences his work with an "Introductory Essay on the Varieties of the Human Species," in which he has manifested, for an *American* writer engaged in the active and arduous duties of a profession peculiarly burdened by toils and interruptions, an amount of reading and application, labor and research, exceedingly unusual, if not unprecedented, and rarely equalled, and perhaps never exceeded on any given subject, and under similar circum-

stances, by a writer of any country. He has judiciously done what every author should feel himself bound to do, from respect toward himself, as well as toward the public—gone to his work with a proud ambition, and a determined resolution to attain and master all the knowledge accessible to him, in relation to the subject he is preparing to handle. By no other mode of proceeding can an author, be his talents and *general* attainments what they may, do full justice to himself or his theme, or produce a work worthy in all respects of public favor.

It is not unimportant to remark, and recommend to remembrance (because it may tend to the prevention of cavils and censures, as respects the "Essay" we are examining,) that the expression, "Varieties of the *Human Species,*" virtually involves a belief, if it does not amount to an avowal of it, in the Mosaic doctrine of the *unity* of man.

Our author, with the habitual correctness of judgment which characterizes him, has adopted that division of the GREAT COMMUNITY OF MAN, which, though not perhaps perfect, we are inclined to think the best, because it is liable to fewest objections. The division is nearly the same with that supported, if not originally devised, by Professor Blumenbach, and classes mankind under five *races;* the *Caucasian;* the *Mongolian;* the *Malay;* the *American;* and the *Ethiopian.* These races our author himself divides into twenty-two families, in the following order:

"I.—THE CAUCASIAN RACE.

1. *The Caucasian Family.*
2. *The Germanic Family.*
3. *The Celtic Family.*
4. *The Arabian Family.*
5. *The Lybian Family.*

6. *The Nilotic Family.*
7. *The Indostanic Family.*

"II.—THE MONGOLIAN RACE.

8. *The Mongul-Tartar Family.*
9. *The Turkish Family.*
10. *The Chinese Family.*
11. *The Indo-Chinese Family.*
12. *The Polar Family.*

"III.—THE MALAY RACE.

13. *The Malay Family.*
14. *The Polynesian Family.*

"IV.—THE AMERICAN RACE.

15. *The American Family.*
16. *The Toltecan Family.*

"V.—THE ETHIOPIAN RACE.

17. *The Negro Family.*
18. *The Caffrarian Family.*
19. *The Hottentot Family.*
20. *The Oceanic-Negro Family.*
21. *The Australian Family.*
22. *The Alforian Family.*"

Such is our author's division of man into *races* and *families*; and of the distinguishing and characteristic traits of each division, he gives us a brief but graphical description. On his details however it is not our present purpose to dwell; because neither our time nor our space permits us to do so. Notices of his results are all we must attempt. And even they must be limited and few. We could not make them full and circumstantial, without writing an entire *treatise*, instead of an article for a periodical work. Nor would it be possible for us to endue with either much interest or usefulness, any thing we could say of our author's details respecting man in Europe,

Asia, Africa, or Polynesia. The reason is plain. His work neither contains, nor was designed to contain any drawings of the "Crania" of the "races" and "families" which form the population of those parts of the globe. We have therefore no source of instruction, phrenological or philosophical, either to enlighten ourselves, or to enable us to enlighten others, on the subject of their intellect, morals, fitness for civilization, or general native character and developments. All we have of information respecting them is historical or narrative, or some limited description of person and countenance. And we need hardly say, that from such premises no substantial or instructive inferences can be drawn, as respects either their intellectual or moral endowments, or their prevailing propensities — nothing in fact to throw any clear and satisfactory light on the constitution of their minds.

As respects the American race and families however the case is different. Of them our author has laid before us correct delineations of the "Crania," tantamount to delineations of the *brains* themselves, which necessarily corresponded to the crania, of about *fifty* different tribes, varieties, or nations. And those skulls thus represented to us, when correctly interpreted, speak the language of nature and truth, as regards the mental endowments of the tribes and individuals to whom they belonged.

Are we asked, on what particular mental attributes of their owners those figures of skulls are calculated to throw light? We reply, on every attribute, provided they are thoroughly understood; but more especially on every leading attribute, fitted for the elevation or depression of a people, by giving them more or less of animal propensity, and of general mental power and character. They disclose, for example, the comparative amount of *native* intellect possessed by those

who wore them; the comparative amount of native morality, sociability, and domesticity; the comparative amount of native pride, independence, and love of liberty, self-government, and sway over others; and also the native amount of animality and passion, manifested in sensual appetite, vindictiveness, cruelty, bloodshed, and war. Nor is this all.

The configuration of the skull and brain discloses likewise something of the different modes in which different tribes and individuals wreak their personal vengeance, or conduct themselves in war—whether by a bold and open attack by day, or by ambush and skulking stratagem, in the night. And when two tribes or nations nearly equal in numbers engage in war, the comparative size and figure of their skulls, foretell in language sufficiently intelligible, and which ought not to be listened to with incredulity or disregard, to which side victory and conquest are likely to incline. They are evidences of the possession or destitution of war-like qualities.

That these sentiments will be received with distrust by many, and perhaps entirely rejected by more of our readers, we are prepared to believe. Nor is the cause of this unknown to us. It is the want of an acquaintance with the principles of the new scheme of mental philosophy. For with those principles the sentiments just uttered are in perfect accordance. They are in harmony with the admitted physiological fact, that the brain and nerves are the master tissue in the organization of our bodies; that they control, strenghten, and direct the other tissues; and that, other things being equal, the greater the amount of cerebral matter individuals possess, they will, whether acting alone, or in union with their fellows, prove the more powerful, efficient, and successful in their enterprizes. And the more likely they will be to become civil rulers in peace, and temporary victors, and per-

manent conquerors in periods of strife. Of course, on the contrary, a tribe or nation, whose skulls and brains are comparatively diminutive are, in consequence of that defect, the less able to defend themselves, and the more liable to be vanquished and enslaved, or exterminated, in war.

Such we say are the grounds, on which the sentiments just expressed are founded. And not only are they in unison with the science of phrenology; by many of the plates in the "Crania Americana" they are abundantly sustained. And of the following points respecting human character, those plates furnish also, in equal abundance, matter of satisfactory illustration and proof.—Other things being alike, the more the animal organs of the brain predominate in a tribe or community over the moral, religious, and reflecting ones, the more ignorant and vindictive, blood-thirsty and cruel in war, and other forms of conflict and punishment, whether public or private, will that community show itself.—The larger in a tribe or nation the organs of self-esteem, love of approbation, conscientiousness, and firmness are, other things being equal, the more difficult of conquest will that tribe be found, and the more certainly will it prefer extermination to slavery.—Once more. Other things being the same, large moral, religious, and reflecting organs facilitate the civilization of a people—and the reverse; and when the moral and religious organs are large in a community, and the intellectual, animal and semi-animal ones small, that community will submit to bondage, rather than to extermination, and perhaps even rather than to banishment from its native soil. To illustrate and prove these positions, by materials derived from our author's "Crania."

Those plates demonstrate, that in the brains of what the writer calls the "American family," which constitutes chief-

ly the aboriginal people of *North* America, the reflecting, moral, and religious organs are comparatively small, and the animal and semi-animal ones proportionably large. And the experience of more than two centuries has abundantly evinced, that that "family," as a body, can be neither civilized nor actually conquered and enslaved; but that their ultimate extinction is an event which is approaching, and whose accomplishment nothing earthly can prevent. This is true of the entire family, on account of the general similarity of their organization, the animal and semi-animal portions of their brains being preponderant. But in some branches of the family this is more signally the case than in others. And their propensities and characters correspond, with great exactness, to their cerebral developments. Thus the animality and semi-animality of the Charibs are immense, while their moral, religious, and reflecting organs are correspondingly small. And they are, beyond all other tribes, wild and indomitable, ferocious and sanguinary. Fierce, warlike and unyielding, rather than submit to conquest and slavery, or to any form of civil restraint, they covet extermination, which is nearly accomplished. Of the Huron tribe, whose cerebral developments are in no small degree analogous, the same may be said. They have refused to yield, have fought desperately, and practised every form of cruelty, and are nearly extinct. With an organization and development of brain, and a condition of mind not dissimilar, the Seminoles are pursuing at present a course of warfare, which, if not abandoned, must lead in the end to a like result.

Possessed of brains, as appears from their skulls, more liberally supplied with moral, religious, and intellectual organs, the Creeks, Choctaws, and Cherokees, though brave, warlike, and proverbially artful, have shown themselves less inexorably

cruel, and less brutally devoted to havoc and blood. They are even reported by a few persons, and believed by many, to exhibit faint glimmerings of an approach to civilization. This however is but groundless rumor. Even of the Cherokees, believed to be the more cultivated of the three tribes, this may be affirmed. The "*full-bloods*" among them are degraded savages. It is the "*half-bloods*" alone, and other mixtures, more or less approaching full Caucasianism (and their number is small) that exhibit any positive traits of civilization and improvement. The chieftain Ross was almost white; Opotheoholo had also much Caucasian blood in him; and the inventor of the celebrated Cherokee alphabet was the son of a Scotchman. And the cerebral developments of the two first named of these, whom we saw in Washington, corresponded sufficiently with their talents and characters. Nor indeed can the Scotch-Cherokee be correctly pronounced the inventor of the alphabet in question. He was only the fortunate receiver, from a Caucasian of a plain and practical suggestion, of which the alphabet was ultimately the product. The stories so widely and zealously circulated, proclaiming the Cherokees an industrious, civilized, agricultural *people*, are rank fabrications, designed no doubt for selfish and party purposes. Considered as a tribe or nation, nineteen out of twenty of them, and perhaps even a larger proportion, are indolent, degraded, and miserable savages. And, instead of having property, as they are asserted to have, a majority of them, probably not much less than that just stated, are pennyless wretches, in a much worse condition than Caucasian paupers.

Another tribe well worthy of being noticed in this place, on account of the light it sheds on the connexion between

cerebral development, mind, and character, is the *Araucanian.* That people inhabit one of the Chilian provinces, toward the southern extreme of South America, and in the excellent development of their brain, as well as in their amount of native intellect, improvability, vigor, and general efficiency of character, stand at the head of the American "RACE," the Mexicans and Peruvians, of former times, in some respects excepted.

In size and shape, the skull of the Araucanian makes a nearer approach to the skull of the Caucasian, than that of any other variety of the aborigines of America. And so does the individual himself in quickness, strength, and compass of mind, and in the energy, firmness, and efficiency of his action, whether he be engaged in hunting or war, or in any other less exciting and perilous pursuit. In the organs especially of Self-esteem, Firmness, Conscientiousness, Combativeness and Love of Approbation, his developments are large. *Hence* his lofty pride and spirit of independence, with his devotedness to a life of liberty, and his resolution to maintain those priviliges at every hazard and every cost, have never yielded under any form of adversity, or degree of suffering. For perhaps a century and a half his unconquerable daring, and determination to be free have led him to sustain a ceaseless war with the Spaniards on his borders; and his resources of intellect, but little inferior to those of his foe, and disciplined into skill by trial and experience, have enabled him to do so with uniform success. Still however do his boundless pride, and his reckless and ungovernable aversion from the slightest check on his licentious freedom, coupled with a deficiency of reflectiveness and moral feeling, prevent him from submitting to the mild and salutary restraint of civilization. With all his qualifications therefore for a different state of

life, he is still a savage. And he is so, as the result of his cerebral development, which renders him intolerant of the control of law, and makes him resolve, like Christian, in Byron's "Island," "to live and die, the fearless and the free."

When attentively studied and thoroughly understood in their nature and relations, the whole case and condition of the Mexicans and Peruvians, ancient and modern (for *they* have their ancient and modern epochs as distinctly marked, and contrasted in as broad and bold relief, as the Europeans and Asiatics)—the case and condition of these nations, when fully and correctly comprehended, present one of the most extraordinary spectacles in the history of man. And, as a moral problem, its solution is as difficult, not to say impracticable, as its aspect as a phenomenon is singular and interesting. Though reiterated attempts to that effect have been made by philosophers the most distinguished for their general knowledge and powers of research, no approach that can be called even *seemingly* successful, has yet been made toward causes competent to the disentanglement of the *knot.* True; efforts have been tried to dissever it by the sword—not of *reason* and *science*, but of *fancy* and *conjecture;* and the blows have but rebounded on the feeble pretenders and aspirants who unskilfully dealt them.

Somewhat more we believe than three centuries ago, Mexico and Peru were found by two bands of European rovers, in the singular, not to call it the *marvellous* condition to which we have referred. They were two populous and apparently powerful empires, under the restraint of discipline and law, and not a little advanced in civilization, wealth and science, luxury and the arts. Yet they had but little, if any, intercourse with one another, and none with any other civilized people, and were situated like two vast islands in a track-

less and unexplored ocean, or two mighty oases in the midst of a boundless desert of ignorance and savagism, degradation and poverty. Nor could there be discovered, we repeat, by the ablest scheme of research that could be instituted, any adequate causes of the immense difference, in matters of mind between them and the various nations around them. In most respects the phenomenon was unique—no parallel to it then existing, or having previously existed, within the purview of history.

Greece, received much of her civilization, science, and arts from Egypt; Rome from Greece; and other parts of Europe from the Italian repositories of intellect and science, literature and taste. But for Egypt no extraneous source of instruction has yet been found—nor perhaps even fancied. Like an electron *per se*, she seems to have been to herself, from her own native endowments, the source of her own pre-eminence and grandeur.

Of Mexico and Peru the same may be affirmed. They stood alone, instructed without instructors, civilized without the influence of examples to that effect, and splendid and mighty from the working of causes inherent in themselves. Like Egypt therefore they seem to have been *originals;* not imitators, copyists, or dependents on others instead of themselves.

Such were some of the peculiarities of the Mexicans and Peruvians. But not the whole of them—nor even perhaps the most striking and unexpected. Though constituting great and independent nations, they were *no warriors*, and became the victims and slaves of a mere handful of freebooters, visiting them from a distant portion of the globe. At the head of less than two hundred Spaniards, Pizarro overthrew and reduced to the most servile condition the empire of Peru, with a popu-

lation of several millions of subjects, affectionately attached to the person of their chief, and enthusiastically devoted to their religion and government. And with a Spanish band of less than five hundred, aided by auxiliaries from some of the surrounding nations, Cortez conquered and enslaved the more populous and powerful empire of Mexico—two events which, as already intimated, are uninterpreted enigmas in the history of man. To what cause or combination of causes shall we look for an explanation of the fact, that victory bound her chaplets on the brows of the few, in conflicts where their adversaries outnumbered them in the ratio of *ten thousand to one?* In such a case, had not the Mexicans and Peruvians been essentially deficient in some high qualities indispensable to success, they could, with perfect ease, have thrown themselves on their foes in numbers so overwhelming, and with a force so irresistible, as literally to tear them into fragments, or trample them under foot, and crush them in mass. Nor could any form of armour, or mode of battle have saved the invaders from such an issue. It is a question then, in anthropology, of no common interest, what were the qualities in which the South Americans were so fatally deficient? It was not in abstract personal courage. In conflicts with each other, and in wars with the surrounding nations, they not only manifested ordinary bravery, but had become the conquerors and masters of the land. It was not in personal strength and activity. In those qualities they were but little, if at all, inferior to their invaders. And the prize for which they fought was of the highest value, and the most inspiriting character, including all that is dearest in life. It was their fire-sides and their families, their altars, and the hallowed ashes of their ancestors. It was every thing that enters into the all-absorbing thoughts, and the soul-inspiring sentiments of the man

and the patriot, which should render him invincible, when doing battle for his *home* and his *native land.*

Nor was it, as most writers and pretended wise-ones on the subject have contended, their vast superiority in military discipline and skill, acquired by more abundant experience in war, that rendered the few Europeans so easily triumphant over the almost innumerable hosts of Americans. Far from it. The difference in military tactics, as far as experience was concerned, between the two contending parties in Mexico and Peru, was not greater, perhaps not so great, as that which existed between the legions of Cæsar and the barbarous hordes with which he contended in Germany, Gaul, and Britain. Yet the issue of war in the two hemispheres was widely different. Notwithstanding his skill and invincible hardihood, as a soldier, and his boundless resources of mind, as a chieftain, Cæsar rarely won a cheap or an easy victory, even when the numbers he led to battle were but little surpassed by those of his enemy.

Others have attributed the easy conquest of the Mexicans and Peruvians to the superstitious veneration in which they held their ruthless assailants, regarding them as beings of a superior nature, who had descended to them from the skies, to become their rulers and benefactors. But that a delusion of this kind took possession of the Americans seems highly improbable. And it is still more improbable, even admitting its occurrence at the first moment of the arrival of the roving marauders, that it should have been of long duration. The inhabitants of the New World must have very soon discovered that the emigrants from the Old were as subject as themselves to bodily injuries, sickness, and other misfortunes and infirmities, and to death itself from wounds and diseases. It is even probable if not certain that, from some of these sources of calami-

ty, especially from that of *seasoning* sickness, the strangers must have suffered much more than the natives. And if our recollection fail us not, such was actually the case. Many of the Spaniards sickened, and not a few of them died, while those whom they had reduced to bondage remained healthy. From the notion of their *divinityship* therefore, admitting it to have had an existence, the "Iberian freebooters" derived in the end but little advantage. There is reason to believe that such advantage was more than counterbalanced by the scorn which their mean cupidity, and the detestation and abhorrence which their cruelty and revolting profligacy engendered.

Still then does the question, "why were the Americans so easily subdued?" remain unanswered. And the correct answer, virtually but silently rendered in the "Crania Americana," is derived from the science of phrenology alone. They were engaged in war with a race of men *superior to themselves*—though not descended immediately from the skies. *For the Spaniards were Caucasians.* And whenever or wherever that race, which stands at the head of the great community of man, (as the nervous and cerebral tissue takes rank of the other tissues of the body,) comes into collision, whether belligerent or pacific, with either of the other races, it never fails in the end to gain and maintain a decided ascendency. To this position we confidently believe that no solid exception can be adduced from either fact or philosophy—the examples of the present, or the history of the past. Nor is it from occurrences in the New World alone that it receives at once illustration and proof. By a phenomenon of equal moment, notoriety, and interest, or rather perhaps of much greater, in the Old World, it is further and no less substantially maintained. We allude to the degraded condition in which

Hindostan, and several neighboring principalities are held by a British army, which, from its incredible inferiority in numbers to the almost boundless amount of the population it controls, might well be deemed infinitely incompetent to the mightiness of the task. That army, containing less than *eighty thousand* rank and file, not a moiety of them, we think, being natives of Europe, has already conquered, now holds in check, and virtually consigns to a degrading vassalage, one hundred and twenty millions of human beings!

To what cause or causes is this astonishing issue ascribable? The answer we think plain. The Asiatics, though not all of a really different *race* from the Europeans who enslave them, are a *degenerate*, perhaps a mongrel branch of the same race. They are not genuine Caucasians; while a large portion of their conquerors and masters, are Anglo-Saxons—that variety which stands decidedly at the head of the Caucasians, and is their highest caste.

Are we asked to specify the actual difference between the Anglo-Saxon and the Hindostanic varieties of man, which gives to the former such a marked superiority over the latter? We reply that it consists in the different size and form of the brain in those varieties, which are fully disclosed, by corresponding difference in the size and form of their "crania." Not only is the *entire* brain of the Anglo-Saxon considerably larger than the brain of the Hindoo; the superior and truly governing organs of it are larger in a still greater proportion. Are we again asked to name those ruling and power-bestowing organs? They are, we reply, more especially Combativeness, Destructiveness, Self esteem, Approbativeness, Frmness, and the *reflecting* organs. All the organs calculated to give greater strength and energy of character, and greater scope and vigour of thought, are larger. Hence the native and ne-

cessary superiority of the Caucasians, especially of the Anglo-Saxon branch, in war, as well as in the higher walks of science, literature, and the arts.

For the easy conquests of Mexico and Peru, similar causes may be correctly assigned. Those events were attributable, not to any superiority of civilization and education, on the part of the *invaders*. In these points the *invaded* were nearly, if not quite on an equality with them. The cause was to be found exclusively in the superiority of native strength and compass of mind on the part of the Europeans. And those qualities arose from the greater size, and better development and configuration of their brains.

The Spaniards were a branch of the Caucasian race. And though they did not belong to the most highly gifted and most efficient branch, they were greatly superior to the American race, with whom they were in conflict. And that superiority was indicated by the greater size, and better development and shape of their crania and brains. They had, in their cerebral organization, a larger endowment of ground for intellectual qualifications, and comparatively a less preponderance of that forming the seat of mere animality. And these native advantages of brain bestowed on them a range and measure of mental compass and power, which the inferiorly organized, and weaker-minded Americans were unable to resist. Those comparative *imbeciles* stood related to their *vigorous assailants*, as boys do to men, idiots to sound-minded persons, or as inferior animals to the human race. Hence the amazing suddenness and completion of their overthrow and degradation!

Groundless and visionary as this position will no doubt appear to those who have *never made the subject of it a matter of study*, it will present itself in that light to *such persons only*.

Individuals sufficiently acquainted with it will view it very differently. They will regard it as one of the most grand and impressive physiological truths that has ever been disclosed. For physiological the phenomena it relates to are—as clearly and decidedly so, as the digestion of food, the secretion of bile, or the circulation of the blood. Yet was it never dreamt of as such until the discoveries of Gall, which will yet be acknowledged to constitute themselves one of the chief scientific triumphs of the nineteenth century; while their fruits will be deposited in the temple of Philosophy, among the most glorious and invaluable trophies her ministers have won.

Nor is it the so deemed mysterious events of the conquest of Mexico, Peru, and Hindostan, that the discoveries of the great German are destined to illuminate and make intelligible and useful. They will render to mankind a similar service, as relates to many other enigmas that have confounded the anthropologist and eluded his scrutiny. In truth they will yet be referred to, by the students and masters of mental and moral science, as the great expounders of the philosophy of history. They will shed on the deeds and characters of the ancient Greeks a light which the world has never yet enjoyed. They will disclose the causes of the ambition, wars, and conquests of Philip and Alexander. They will tell why Cæsar first glorified and then enslaved his country, and ultimately fell by the dagger of Brutus; why the Roman empire, after having become and continued for centuries, a marvel of power and greatness, injustice and crime, was reduced at length to a mighty ruin, by barbarian invaders; why Palestine was inundated by the mingled blood of the Crusaders and the Saracens; why the clouds of the Dark Ages, brought down on the world by the disasters of the sword, were ultimately dispersed by the return of the sun of literature and science; why Napo-

been first astonished the world by the miracles of his greatness and power, and then ended his career in captivity and exile; and why our own country was rendered independent and glorious, by Washington and his compatriots; and has increased in wealth and renown, and their concomitants, with a rapidity and steadiness altogether unprecedented in the annals of nations.

These were all physiological events, produced through the functions of the human brain, and will hereafter be universally acknowledged as such, by those who shall become competent judges of the subject. And for this great result, the world will be indebted to the genius and labors of the founders of phrenology. Physiologists and philosophers will learn and acknowledge, that man, to be studied correctly, as a being to be acted on mentally himself, or to act by mind on others, whether for elevation or degradation, for good or for evil, *must be studied through his brain.* And that in all their manifestations and conditions, his moral and intellectual natures, instead of being any longer investigated by or through the laws, supposed to regulate abstract spirit, must be approached and comprehended (if comprehended at all,) through the instrumentality of the material machinery, on which his spirit immediately acts. In other words; that all the events and phenomena, in which man is concerned, either as agent or subject, and whether they be peaceful or belligerent, scientific or literary, instead of being regarded, as heretofore, as the *immediate* products of mind, will be considered, in time to come, as referable to mind, only through the attributes of the nervous system. Thus will anatomy and physiology be justly ranked among the most elevated branches of human knowledge, and be received and recognized as the true foundation of anthropology and mental philosophy.

This digression however we must pursue no further, but here conclude both it and our review. Meantime it is our purpose to bring the "*Crania Americana*" once more before the public, in a future number of the Journal, when we shall endeavor to submit to our readers a fuller, more direct, and more detailed analysis of it, than we have given in the present.

C. C.

Selections from American and Foreign Journals.

Case of Introsusceptio cured by forcing Air into the Intestines.—James Thompson, æt. 44, of a rather spare habit of body, but in the general enjoyment of good health, was suddenly taken ill with pain in his bowels, about ten o'clock in the evening of the 25th Nov. last. He took some spirits, warm drinks, bathed his feet in warm water, and applied warm fomentations to the belly, thinking the pain would wear off. It continued to increase however, and I saw him on the morning of the 29th. I found him laboring under the following symptoms. Pulse full and not particularly hurried—tongue clean—face anxious—belly not distended, and particularly relieved by severe but equitable pressure. No alvine discharge since 4 P. M. the preceding day—pain about the umbilicus most excrutiating—not steady, but at intervals of from three to four minutes, accompanied by severe vomiting and great thirst. I immediately ordered a purgative glyster, which came off almost immediately, bringing with it the contents of the rectum without abating the pain. I ordered its repetition —part returned the same as thrown up, and part remained; but the violent pain still continued. I then applied a blister over the whole surface of the abdomen, and give him a powerful opiate; after an hour this settled the vomiting, and in some degree dulled the pain. I then gave him s. m. hyd. gr. xii. and left him. Twelve hours after the pain and vomiting had returned as violently as ever—still no pain on pressure. I then endeavored to open the bowels by throwing up as much warm water by the domestic machine as I possibly could; he complained of straitness, and part of the water returned without any effect—I then repeated the calomel and left him. On the morning of the 27th, the calomel had proved useless, and the vomiting and pain were as violent as ever; thirst severe, and perspiration profuse. On pressing the belly pain was

now felt in the region of the caput cæcum. It was now evident that unless he was speedily relieved death must ensue. I again attempted to overcome the obstruction by throwing up about a gallon of warm water until it was forced back and a considerable part discharged without the least relief. Having some little time ago seen the injection of air suggested in cases similar (I think in a recent Number of the Medico-Chirurgical Review, although I cannot lay my hand upon it now,) I determined to try it. Having nothing at hand but a common bellows, I inserted the tube into the rectum, and commenced gradually to force up the cold air. As soon as it found its way into the intestines, the patient said he felt somewhat easier, and I persevered until I could force no more. In a second or two the rarified air, was forced back with great violence bringing with it the remaining portion of the water I injected, but nothing more. He said he felt rather easier and urged its repetition. This I did for other two different times with no appearance of relief. On the fourth trial, however, the room was filled with a most fetid smell caused by a very free discharge of fæculent matter—he felt relieved, the vomiting ceased, and he complained only of general soreness. I now gave him 8 grs. of cal. with one grain p. opii and left him. That evening he had an alvine discharge, and the following morning he got ol. ricini, ʒj. which operated freely in the course of the day, and the cure was complete.

Whether the foregoing case was real introsusceptio or not I am not prepared to say, but I am sure of this, that, had I not succeeded by the forcing up of air into the intestines, there were no other means that I am aware of whereby I had the least chance to save the poor fellow. I have given the case at this length, as I conceive the plan pursued worthy the attention of the profession in similar cases. It would be absurd to draw a conclusion from a single case, but from what occurred to me in this instance, the practice appears to be perfectly harmless, since the moment the air became rarified it came off with great force, and left no disagreeable consequence behind.—*Medico-Chirurg. Review.*

Dividing the Internal Rectus Muscle for the cure of Squinting.—William James Egan, aged 10, was born with his eyes perfectly straight. When he was two years of age he suffered from convulsions, and after a more severe one than usual the strabismus took place.

Present state.—His left eye turned deeply inwards, with a

slight degree of obliquity upwards; its sight is not so powerful as that of the right; there is a slight degree of opacity of the inner circumference of the cornea, and the organ is more sunken than its fellow. With much exertion the patient can evert the eye to the extent of about four lines.

With the assistance of Mr. Downing, Mr. Bailey, Mr. Earles, and Mr. Snow, I performed this operation as follows: The eyelids were held apart simply by means of the fingers; I seized the inner conjunctiva with a small sharp hook, and divided this membrane from below upwards, with a fine narrow bladed knife. At the instant of doing this the eye forcibly turned more inwards, which retarted the operation a a few moments: keeping the hook still fixed in the inner segment of the divided conjunctiva, I allowed the lids to cover the globe, and a few drops of blood were wiped away by means of a sponge and cold water. Exposing the eye again by simply elevating the upper, and depressing the inner lids with the fingers of two assistants, I readily exposed the incision of the conjunctiva, and having separated the connecting reticular tissue by a blunt probe, as in the other cases; I introduced the blunt hook, and with much facility passed it from below upwards, beneath the inner rectus muscle, and drawing it forwards, I divided its tendon with a curved scissors.

The tendon of the muscle was unusually thick and strong, far different from the appearance which it presented in the other cases; it *grated* beneath the blades of the scissors upon dividing it, which, being accomplished, the eye became instantaneously straight.

The whole operation only occupied two minutes.

In this case the speculum was dispensed with, and the only instruments used were a hook, a knife, a probe, and a scissors.

After the operation a cold bread and water poultice was applied to the eye, a powder, consisting of Jame's powder and calomel, was given, and the boy was put to bed.

This little patient evinced great strength. I explained to him beforehand the object of the operation, and saw he could assist us by everting his eye as much as possible, and which he did at the time it was most needed.

Remarks.—Were the operation of dividing the muscles of the human eye for the cure of strabismus, attended with danger to the organ of vision, with consequences of even a much less serious nature, the propriety of its performance might justly be regarded as questionable. But when it is considered that no bad consequences have followed this interesting operation—that the patient suffers but little during its perform-

ance—and that, in the cases to which it is applicable, the most gratifying success has attended it; its extensive application to the removal of strabismus cannot be too forcibly insisted upon.—*London Lancet. American Med. Int. June* 15, 1840.

On the Prevention of Tubercles.—In a letter addressed to the Royal Academy of Medicine, M. Coster announces that, from certain experiments which he has made, he hopes to prove,

1. That it is possible, even in the face of predisposing causes, to prevent the development of the tubercular diathesis.

2. That even where the formation of tubercles has commenced, their progress may, in a great number of cases, be arrested.

The following are a few of the experiments upon which M. Coster has built up his hopes:

Two years ago he placed a number of dogs, rabbits, &c., in the circumstances most favorable to the development of the scrofulous diathesis. Thus, many of the unfortunate animals were shut up in dungeons, without light, incapable of moving, and exposed to a moist cold by means of wet sponges which were hung up in the cages. Some of the animals which were placed in these conditions, were fed on their ordinary diet; others were fed with ferruginous bread containing ½ oz. carbonate of iron to the pound. All the former became ill, the greater part tuberculous, but not one of those fed on the bread containing iron presented a trace of tubercles.—*London Lancet, from Bult. de l'Acad., Jan.* 31, 1840. *Med. Examiner, May* 16, 1840.

On the Adulteration of the Sulphate of Quinine.—The recent rise in the price of sulphate of quinine has induced many unprincipled venders of drugs to adulterate it with various ingredients; to such an extent, indeed, has this been carried, in some instances, that not more than a fifth part of what was sold as sulphate of quinine really consisted of that substance. M. Vallet found that the substance chiefly used for the adulteration of the sulphate of quinine was Mannite, a substance similar in external appearance to the sulphate of quinine, but destitute of all the valuable properties for which quinine is so justly celebrated. He found, however, that the adulteration could be with great ease detected by means of

pure alcohol, which dissolves the quinine alone, but leaves untouched the mannite, which, however, is freely soluble in water and of its characteristic sweet taste.

M. Dubail has also arrived at the same conclusions as M. Vallet, and in pursuing his investigations, met with one sample of the sulphate of quinine, which, though presenting all the external characters of the genuine unadulterated drug, both as regarded its lightness and silky appearance, did not contain above a sixth part of its weight of sulphate of quinine. The rest was composed of mannite, insoluble in alcohol, but soluble in water, and of a sweet taste.

M. Pelletier has found that that which is sold in sealed packages, with the impress of his own seal, has also been subjected to adulteration, but the substance used in this instance, is gypsum. The same test, however, viz. the solubility in alcohol, applies to this case, so that every druggist would do well to apply this simple test to the sample of this drug before purchasing.—*Edinburgh Med. and Surg. Jour., from Journal de Pharmacie*, January, 1840.

Notice of a New Monstrosity; A portion of a Fœtus living upon the Testicle. By M. Velpeau.—The case on which I propose to engage the Academy to-day, is one of the most strange that the sciences of observation have yet had to consider; interesting at once to surgery, pathology, anatomy, generation, physiology in general, it appears to be without parallel among known facts. It relates to a living portion of a fœtus fixed in the testicle of an adult, where it seems to have been developed and to have lived since his birth. This is a peculiarity so contrary to what we know, and is at first glance so incomprehensible, that one might be justified in doubting its existence if I did not possess the substantial proof of it in the preparations here presented, and if the patient and the tumour had not been observed by several hundreds of practitioners and students, and if the operation had not been performed in the presence of 500 persons. The case is, in a few words, as follows:

A young man, named Gallochat, of Esterney, aged 27, of a good constitution, and who had never suffered from any severe disease, was sent, in the middle of January, to M. Andral, who at once passed him over to my division in the Hopital de la Charite.

On examination, I found that the patient had a tumour, nearly as large as a fist, on the right side of the scrotum. It

appeared unconnected with the substance of the testicle; the skin over it presented no analogy to that of the scrotum, and it did not appear to me to belong to any known class of tumours. Although several surgeons thought it might be referred, some to the cancerous tumours, some to the fibrous, and some to the tuberculous class, I did not think it possible to adopt their opinion. Observing, moreover, that its origin dated back to the patient's birth, that it was not perceived at its commencement, that it had never produced any pain, that no pathological process had been set up in it, and that it could be cut, or pricked, or pierced through and through, without causing the least suffering; taking notice also of the aspect of the skin which covered its external surface, of its elasticity, of the indurations which it presented internally, of a tuft of hair which came from a kind of ulcer at its posterior part, of a reddish tubercle at the bottom of another opening anteriorly, and of a glairy or grumous matter which the patient had sometimes discharged; I came to the idea that it was a *fœtal tumor, a product of conception.*

Wishing to obtain exact information on the earliest history of so singular a production, I wrote to M. Senoble, physician at Esternay, who answered me thus: "At the age of about four months, the mother of Gallochat came to show me her child; he then had a tumour, or merely a swelling of the scrotum, which I found to be only a pneumatocele. Some months afterwards, I found, on examining him again, a small inflamed tumour, which appeared to me to be a slight phlegmon, and which yielded to simple emollient local applications. I heard no more of him till at the end of three or four years, when I learned that the child's tumour still continued enlarging." Now although these details were very incomplete, they yet strengthened me in my first opinion; which seemed so singular to those to whom I mentioned it, that I alone held it. I therefore planned the removal of the tumour without taking away the testicle, intending to perform a kind of *Cæsarean operation on the man.* The details of the proceeding belong entirely to surgery, and need not now occupy me; it may be sufficient to state that its results were satisfactory.

The examination of the tumour has enabled me to detect nearly all the anatomical elements of the body of a mammal. Thus, its external layer is evidently cutaneous; the greater part of its substance is a mixture of lamellæ and fibres which give the idea of the cellular, adipose, muscular, and fibrous tissues. In its interior, we found two small cysts filled with matter like albumen or the vitreous humour of the eye; another cyst,

as large as a partridge's egg, contained a greenish yellow and semi-liquid matter like meconium; in a fourth sac there was a grumous substance, of a dirty-yellow colour, concrete, and surrounded with hair. The substance from this last sac, when analyzed and examined with the microscope, presented all the characters of sebaceous matter and scales of epidermis. The hairs did not appear to have any bulbs at their bases. The tuft of hair which was seen externally, protruded from one of these cysts—from that which was filled with greenish matter; and the opening in it had some analogy with an anus.

Lastly, in the midst of all these elements, we found numerous portions of the skeleton perfectly organized, evidently belonging (as any one may convince himself by examining the preparation) to true bones, and not to accidental productions. These bones, which were every where enveloped by a sort of periosteum, and of which the several pieces were moveable upon each other, and had distinct articulations, may be divided into three sets. The first group is essentially composed of three pieces, in which I thought I could recognize the clavicle, the scapula, and a part of the humerus. The second group, much larger than the preceding, appears to belong to the pelvis, or perhaps to the base of the skull; the body of the sphenoid, or else the sacrum, forms the central portion. Lastly, the third series seems to comprehend portions of vertebræ and fragments of undetermined bones.

Whatever be the name that the different portions I have pointed out may deserve, certain it is that they belong to a product of conception, and to a fœtus already far advanced in its development. They are before the Academy, and the correctness of the fact is absolutely incontrovertible. In the monstrosity by inclusion, as it is called, which has been described by Dupuytren, Geoffroy, and Olivier, one of the fœtuses absorbed by the other has always appeared surrounded by a cyst, and in the condition of a foreign body in the tissues of the fœtus which has continued alive. In the cases related by Saint-Donat, Prochaska, and others, of the debris of fœtuses contained in the scrotum, there have always been encysted tumours, necrosed bones, and organized parts destroyed by suppuration and in a state of decomposition. In this subject, on the contrary, every thing has continued to live. The abnormal tumor had its own proper colour, consistence, and sensibility, entirely independent of the individual who supported it; a clear well-defined line separated the integuments of its skin from the scrotum. I pinched it with all possible force; I pricked it with various instruments; the

young man himself several times ran a knife into it, without feeling the least painful sensations; and yet all the wounds that were made in it bled abundantly, inflamed, and cicatrized, like those of any other part of the body, and nothing indicated in it the least diseased condition. The substances, and all the elements that were found in it, gave the idea of normal tissues or products, and we were quite unable to discover the existence of the least drop of pus, or of any carious or necrosed bone, any altered cartilage, or the least fungous production.

When, on the other hand, one observes that the tumor was as large as a fist—that the surgeon who saw the child when four months old scarcely took notice of it, and that he took it at first for a pneumatocele, and then for a little phlegmon, which terminated by resolution—it is difficult to believe that its volume was as considerable at the birth of the patient as it was the time when I first saw it. Such a mass in an infant would certainly have attracted great attention both from the physician and the family. We must remember, moreover, that, according to M. Senoble's statement, the tumor continued to grow at least up to the age of six or seven years, and that the young man, who says that it has always had the same appearance, can scarcely charge his memory so far back as that time of his life: we must therefore conclude that the portions of the fœtus which I have described have lived and been developed simultaneously with the individual who bore them, and that there were thus two beings united to one another.

Now how could this take place? Did a part of the fœtus, the remainder of which has disappeared, become attached, during intrauterine life, to the scrotum, in such a manner as to remain there in the form of a graft?—or can this be the remains of a fœtus which at first passed into the abdomen of another, and then descended by the tunica vaginalis, and has at last worn away from within outwards the envelopes of the scrotum?—or, lastly, have we here a creation, the unaided product, of the testicle? But I desist; these are delicate questions in high physiology and in transcendental anatomy, which I am neither able nor willing to broach till the preparations which suggest them have been submitted to the judgment of the Academy.—*London, from Paris Medical Gazette, Feb.* 15, 1840.—*Medical Examiner, June.*

The following interesting facts were communicated to the editor of the Boston Medical and Surgical Journal, by Dr. Silas Brown, of Wilmington.

FACTS IN RELATION TO VACCINATION.

I submit the following statement of such facts as have recently come under my observation, hoping that they may prove useful in convincing the skeptical of the efficacy of kinepox as a substitute for small pox. Many reports have been in circulation among the people, in this vicinity, detrimental to the expansion of cowpox, which have caused a delay of vaccination till the smallpox has broken out in some of their families. One is, that it will serve only a temporary purpose; and unless re-vaccinated, a person is as liable to have the smallpox after vaccination as before. Another is, that it only answers a partial purpose, and will not wholly insure a person against variola or variolnid, and therefore he may through life live under continued apprehensions and fears of the contagion of those varieties of the same disease.

It is not my object to give a detailed account of the treatment of my patients, but merely to show that the cowpox has been an effectual antidote to smallpox in the several instances to be described.

About the first of February last, the smallpox made its appearance in four different families, in one of our school districts; the subjects were four scholars; the first a lad about 18 years old, the second a girl about 12, the third a girl of 9, the fourth a boy about 8. Neither of them had ever been vaccinated. The family to which the first belonged consisted of four members, all adults, besides the patient, two of whom had been vaccinated and two had not. They were all vaccinated as soon as the eruption gave satisfactory evidence that the patient had the smallpox. It proved a severe case; the face was so swollen that the patient's eyes were closed for several days. The eruption appeared on the 4th day of February and ran through its course without a secondary fever, and he speedily recovered his health. Now it is the 4th day of May, and neither of the vaccinated persons has suffered any sickness, except what follows vaccination.

The second broke out on the 5th day of February, and a similar case to the first, till the 13th, when the secondary fever took place, accompanied with cough and inflammation in the lungs, which continued till the last of the month before her fever manifested any abatement, and her friends despaired

of her recovery. She is now restored to health, May 4th.—The girl lived in the house with her grandmother, uncle, aunt, and a large family of cousins. The uncle, aunt, and several of the cousins had never been vaccinated till two days after the eruption appeared upon the patient, when the whole family were vaccinated, and have suffered no inconvenience, except from vaccination, to the present time, May 25th.

The eruption upon the third patient appeared on the 5th of February, was of the distinct kind, and ran a regular course. The secondary fever was slight, and the patient recovered without any distressing symptoms. The parents of this child had been vaccinated nearly 30 years, and part of the children about three years. The remainder I vaccinated two days after the eruption appeared upon the patient. The youngest, a child about two years old, kept with its mother, who had the care of the patient, night and day. About the 11th day after vaccination, the child had a sore arm and other symptoms accompanying cowpox, and appeared more feverish than the other children vaccinated at the same time. On the 14th day from the eruption of smallpox on the other patient, the infant broke out with varioloid, which passed off in a very mild manner, and was the only case of varioloid which occurred among the numerous members of the above-stated families. Is it not probable this child had received the contagion previous to vaccination?

The fourth patient broke out on the 7th of February. His disorder ran a regular course, and terminated favorably. The family consisted of four adult persons and one infant. The mother of the patient and the infant had not been vaccinated previously to the sickness of the patient, but they were soon afterwards, and the other members were re-vaccinated at the same time. Now it is the 25th of May, and none of them have suffered any sickness, except what is consequent to kinepox.

I was called to a child the 8th of April, in a neighboring town, about six months old, with an eruption which proved to be smallpox of the distinct kind, and which ran a favorable course. The parents of the child and other children of the family had been vaccinated. The mother nursed the child to the close of the disorder, and none of them suffered any inconvenience from contagion.

I think, in the above stated cases, the evidence adduced must convince the doubting part of the community, and amply testify to the efficacy of cowpox as a substitute for

smallpox. The people in this vicinity have dismissed their doubts which formerly existed, and have full confidence in the virtues of vaccination.

On the employment of the Oil of Cod Fish in Scrofulous Diseases. By M. Taufflied.—[The beneficial influence of the oil of cod fish in certain forms of scrofulous disease, has within the last few years been dwelt on by various German writers; M. Taufflied reports eight cases, from which he draws the following inferences confirmative of their accounts.] 1. The oil of cod fish exercises a favorable influence on the general state of lymphatic subjects. 2. If administered with proper care it possesses the property of curing scrofula of the bones, tabes mesenterica, and scrofulous or rheumatismal chronic arthritis. 3. Caries accompanied with solution of continuity and engorgement of the soft parts requires local treatment in addition to the oil administered internally. Under these circumstances compression and alcoholic iodureted fomentations may be successfully employed. 4. The oil of cod fish has no efficacy in cases of gouty arthritis, nor does it exercise any influence on the engorgement of any lymphatic glands except the abdominal. It seems to have little or no effect on scrofulous phthisis, if this be at all advanced. 5. The oil should be administered perseveringly and for several months, in order to secure advantageous results.—*Gaz. Medicale de Paris.—Bost. Med. and Surg. Jour.*

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*Treatment of Syphilis.**—M. Ricord has recently made some observations on the treatment of syphilis, in a French journal, of which the following is the substance:

M. Ricord divides the progress of syphilis into three stages or phases. In the first, the action of the virus is completely local; in the second stage, the accidents are confined to the skin, or mucous membranes, and are characterised by the fact that the morbid products are incapable of producing the original disease, or inoculation. The symptoms of the third stage rarely occur before the seventh month, and are incapable of being transmitted by hereditary disposition: this is their characteristic mark.

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* Abridged from L'Experience, No. 141; and London Lancet, April 11, 1840, p. 112.

M. Ricord considers the mercurial treatment to be more frequently injurious than useful in the first stage. On the contrary, mercury is absolutely necessary in the second stage.

Where the tertiary symptoms alone exist, M. Ricord has generally recourse to the ioduret of potassium. He begins with doses of ten grains in the following manner:

Distilled water, 3 ʒ;
Ioduret of potassium, 10 grs.;
Syrup of poppies, 1 ʒ.

This potion is taken in three doses, during the day, with sarsaparilla, the quantity of the ioduret gradually increased every five days, until the patient takes 100 grains a day.

Whenever secondary symptoms coexist with the tertiary, M. Ricord administers the proto-ioduret of mercury in the dose of a grain, gradually increased to six grains.—*American Med. Lib.*

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*New Treatment of Cancer.**—M. Jobert has endeavored to check the progress of this terrible malady, by tying all the vessels and dividing all the nerves which are distributed to the affected part. His efforts, however, have not been crowned with success.

In four cases of cancer of the lip M. Jobert tied the facial and coronary vessels, and divided the branches of the fifth nerve, which pass to the lip. The ligature of the vessels caused some improvement in the appearance of the ulcers, and on dividing the nerves the pain was removed; but in all cases he was compelled to extirpate the disease, at last.—*Ib.*

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* L'Experience, l. c.; and Lond. Lancet, April 11, 1840, p. 112.

THE WESTERN JOURNAL.

No. 1.

LOUISVILLE, JULY 25, 1840.

MEDICINE IN PARIS.

We have the pleasure of laying before our readers another letter from our esteemed correspondent, Dr. Linton, giving an account of the state of medicine in the French capital. It will be found interesting, though Dr. L. apologises for not making it so practical as he intends his future communications shall be. He proposes shortly visiting Edinburgh and Dublin, from which points he promises we shall often hear from him. Y.

Paris, May 1, 1840.

Dear Sir:—In my last letter, I attempted to afford you a concise account of the organization of medical institutions in Paris, and France generally. I proceed, in the present, to a notice of the actual state of the science—a task to which my limits would prevent me from doing ample justice, not to speak of other and weightier reasons. Since the downfall of Broussaisism, no other exclusive system of medicine has been favored with the general sanction of

the profession. The time seems to have gone by when system-builders may expect the multitude to bow down to their idols, and yield a slavish credence to their dogmas and dreams. The doctrine of comparative equality appears to be obtaining, as well in the scientific, as in the political world, and as the notions of the divine rights of kings are about being forever banished from the latter, the yoke of the authority of great names is almost thrown off by the former.

In medicine, this is unquestionably the result of the great facilities which are now afforded to all, for the study of its various departments. Every one can examine for himself the facts and truths whose logical deductions should constitute the principles of the profession; and is of course in a condition to think and reason, as well as observe for himself; or in other words, to build theories for himself—not airy and speculative hypotheses, but theories, rational theories, which is but another term for cautious inductions, and the truths—the principles, which flow necessarily from them. *Exclusive theory* in medicine, will, I think, be found in every instance to be the offspring of hasty induction or generalizations. The pathologist, for example, finds that irritation is capable of exciting inflammation, and a host of diseases, local and general; and in the ardour of his discoveries, hastens to the conclusion, that all "the ills that flesh is heir to," are thus produced. Another observes, that, in the forms of fever called typhus, the small intestines are the seat of a peculiar species of ulcers; and this fact being observed in a greater or less number of cases, he arrives at the general conclusion, that this lesion is not only an invariable accompaniment of typhus, but the *fons et origo* of the malady.

Hahnemann observed, or is said to have observed, that quinine given to the healthy subject produces intermittent fever; and knowing, that this therapeutic agent is almost a specific in this disease, he concluded, after making other analogous observations, that the best method of curing disease is to administer, in each particular case, the agent capable of producing a *similar* disease. Now, there is *some* truth in this. We know that cold is a therapeutic agent of undoubted power even in the diseases which it produces. What is better for a frozen limb than frictions with snow? The same law, says Hahnemann, holds good in the prevention of disease, which is best effected by substituting the mild for the graver forms; and the

small pox may be cited as an example. Is not the process of acclimation effected in the same way? But Hahnemann went still further. In a state of disease, says he, the organs are far more irritable than in health, and therefore the dose of the agent administered must be greatly diminished. Hence his small, almost infinitesimal doses. Examples of this hasty generalization, or formation of theories, might be multiplied were it necessary. But I only wished to express and illustrate the opinion, that all the exclusive theories which have, from time to time, been presented to the medical public, consist of inductions pushed too far—deductions more or less logical, with a goodly amount of speculation, and that consequently they are not altogether either true or false.

Thousands of diseases are produced by irritation. This no one doubts; though the theory, that all the morbid changes to which the organization is subject are thus produced, may well be questioned or rejected; and thus, though *Broussaisism* may be regarded as fallen, the facts which formed the basis of his too aspiring edifice still stand secure and unmoved.

Though no exclusive system of medicine prevails at present in France, yet it cannot be said, that the science is "in ruins." The observation of facts is going on rapidly; their classification, and the deduction of principles from them is the work of calmness and caution. One class is not permitted, like the rod of Aaron, to swallow up the rest, and thus constitute a huge, though frail, and indefensible body, known by the name of "exclusive theory." The humoral pathology is gaining ground in Paris. You hear almost as much about lesions of the blood, as lesions of the solids—as much about passive congestions and sedatives, as irritations and inflammations; and of sustaining the patient by cordials and stimulants, as of reducing him by the lancet, leeches and gum water. No *exclusive* theory of pathology or therapeutics need be expected again, in France, from the fact, that no such system can be true. The industrious and talented observer may be disposed, occasionally, to push his conclusions farther than the facts warrent; but in such an event, instead of being hailed by the multitude as an extraordinary genius, and of seeing his mental offspring adored as the veritable child of philosophy and truth, hundreds of observers as industrious and gifted as himself will not only refuse their credence to his dogmas, but respond in resistless might, thus far, and no farther, the facts justify

you in going, and here shall thy proud spirit of speculation be stayed."

Thus *Chomel* and *Rostan* watch the movements of *Louis* and *Bouillaud*—thus *Gibert* and *Trousseau* expose the errors of the younger *Broussais* and *Piory*—thus the materialist combats the aërial philosophy of the vitalist; and the rationalist, the uncertainty and unsoundness of the principles of the numerist; whilst the thoughtful Andral regards the whole with unbiased scrutiny. Thus, also, in the department of surgery, the innovations of *Civiale Guerin* and *Leroy d'Etiolles*, are submitted afresh to the crucible of experiment by *Velpeau*, *Roux*, *Sanson*, and a host of others; whilst *Lisfranc*, the fault-finding and unsparing demi-god of French Surgery, pours out upon each new principle, method, and procedure, the vials of relentless criticism. Thus, in short, are the masterspirits of the times engaged in close observation and cautious induction, each ready to expose the hasty generalizations of the others. In such a state of things, he does not understand the signs of the times, who looks for the establishment of an exclusive system. He may look for what is daily taking place—the perfectionment of the many principles or generalizations of the profession; but not for the time when one simple generalization shall constitute the science of medicine.

It is almost unnecessary to say, that all parties agree as to the importance of anatomical studies: Pathological anatomy is cultivated with indefatigable zeal; though it is not to be denied, that something more is necessary in order to cure diseases, than the mere knowledge of the pathological lesions in which they consist; and that a great many of those lesions, though grave enough to produce death, elude the most scrutinizing autopsies. Alterations in the organization, which consist merely in a loss of equilibrium between the solids and fluids, and those especially which affect the nervous centres, though of a serious and sometimes promptly fatal character, are not easily detected in *post mortem* examinations. These considerations have caused many to estimate pathological anatomy beneath its deserts; whilst, on the other hand, its advantages are perhaps overrated by those devoted to its cultivation. It is clear however, that every thing is not to be expected from any one source; and that this department of medical science presents its quota of light to the physician. The *numerists*, at the head of whom may be placed

Bouillaud, regard numbers as the great lever which is to raise medicine to the height of certainty. Fifty cases of typhus, say they, were treated by the lancet, and fifty by purgatives and stimulants: out of the former, forty recovered; out of the latter, but twenty; therefore, the one treatment is superior to the other in the proportion of forty to twenty, or two to one. In short, they rely greatly on statistical tables. Now, who disputes the value of statistics in medicine? No one, I suppose; but, at the same time it is easy to perceive, that they are not infallible, when we consider the great variety presented by the constitutions of patients, and that indeed no two cases of disease are exactly alike.

I had intended, in this letter, as I promised in my last, to give something more practical. I find, however, that I have almost exhausted my paper without having complied with that promise. I will, therefore, conclude by giving you the classification adopted by *Cruveilhier* in his course of pathological anatomy: I transcribe from 'the black board.'

Lesions Morbids.—1st *Divisions.*—2d *Adhesions.*—3d *Displacements.*—4th *Canalization.*—.5th *Hypertrophy.*—6th *Transformations.*—7th *Hypersecretions.*—8th *Hæmorrhagy.*—9th *Inflammation.*—10th *Tubercle.*—11th *Cancers.*

The professor commenced his present course upon the fourth order of his classification, viz: *Canalization*, under which he treats of all the alterations of canals—as of the digestive tube, the excretory ducts, the vascular system, &c., &c. He has been ever since his appointment to this chair engaged with the three foregoing orders, at which rate he will be some years in getting through his entire course. I suppose he intends it to be a *complete* one. In my next, I will endeavor to give a resumé of the lectures of Professor *Trousseau*, on the therapeutic properties of iron. He is regarded as one of the ablest therapeuticians of the capital.

M. L. L.

NATCHEZ TORNADO.

We have seen several short notices of this desolating tempest by gentemen of Natchez, from which we propose imbodying some of the more remarkable facts. According to Dr. Tooley, whose account is the fullest that we have read, the morning of the fatal 7th of May was densely overcast, and very warm, with a brisk south wind which increased about about noon, veering to the east. The southwestern sky at mid-day assumed a darker and more tempestuous aspect, the gloom and turbulence increasing every moment; and by forty-five minutes after 12 the storm began to be distinctly heard, the wind blowing a gale from the north east. The roar of the tempest, which grew louder and more terrific as it advanced rapidly upon the city, was attended with incessant flashes of forked lightning. At 1.45, Dr. Tooley describes the storm-cloud as assuming "an almost pitchy darkness, curling, rushing, roaring above, below, a lurid yellow, dashing upward, and rapidly approaching, striking the Mississippi some six or seven miles below the city, spreading desolation upon each side, the western side, being the centre of the annulus. At this time a blackness of darkness overspread the heavens, and when the annulus approached the city, the wind suddenly veered to the S. E. 8, attended with such crashing thunder as shook the solid earth. At 2.10 the tornado burst upon the city, dashing diagonally through it, attended with such murky darkness, roaring and crashing, that the citizens saw not, heard not, knew not the wide wasting destruction around them." The rush of the tornado over the city occupied a space of time not exceeding five minutes, and the destructive blast not more than a few seconds. At this moment the barometer fell according to one writer to nearly 29.

The disastrous effects of the storm are too well known to the readers of the Journal to require a lengthened description. "Natchez under the Hill," with the exception of one or two houses, was razed to the ground, and nearly every private dwelling, and public edifice in the city sustained more or less injury. Hundreds of houses were unroofed, or had their gable ends or windows blown out; of three steamboats at the wharf, two were sunk, and the third, which was freighted with lead, had its upper works blown away to the water's edge; not less than sixty flat boats parted their cables, and

were swamped; and three hundred human beings, it is computed, perished on the land and in the river during the few moments in which the tempest was passing. Few such storms are recorded in the history of the United States, but as hurricanes of destructive violence occur almost every year in some part of the country, it becomes a matter of something more than curious interest to ascertain the laws by which they are governed, and the mode in which they exert their tremendous force. We were informed by Dr. Cartwright, that Dr. Tooley preserved his house from all injury, even the breaking of a pane of glass, by adopting the measures which his theory of storms suggested. That theory was the *explosive* one — that, where houses are demolished by a tornado, it is in consequence of the sudden expansion of the air within, caused by the instantaneous rarefaction of the external atmosphere. Dr. Tooley observed, that as the storm approached the mercury in his barometer sunk rapidly; and he prepared for the expansion of the air in his house by raising all the windows and throwing open the doors. His house was not so well built to resist a storm as many of those in his neighborhood which were prostrated, or sustained more or less damage, and its escape can only be accounted for by the fact, that he provided for the exit of the air which, confined, must have blown out the windows, as happened in many instances, if it had not blown down the house. A wing of Dr. Cartwright's house was blown down, but the main body of it which was of a very substantial structure, escaped with the loss of its chimneys and the bursting out of the windows.

What is the rationale of tornadoes? Is the force exerted owing to the gyratory motion of the atmosphere, or to a sudden rarefaction in some portion of it, causing a corresponding expansion of those portions immediately under it or around it? In many storms there can be no doubt, that the gyrations of the atmosphere do the mischief, as where forest trees are seen twisted off. In other cases the violent sweep of the atmosphere bears down all before it. But in Natchez the wind is said not to have been more violent than the persons who were present had often seen it when no extensive mischief was done; and this tornado, from a multitude of facts collected, seems to have been of the class in which the ruin results from explosions. The following may be cited from a great number:

1. The gardener of Dr. Cartwright had just quit his employ, and

in leaving his house neglected to close the doors and windows. It escaped without injury. The gardener of a friend, living in his immediate neighborhood, hastened when he saw the storm approaching, and succeeded in closing his doors and windows, which he had scarcely done when the house fell upon him and killed him.

2. The garret of a brick house, mentioned in the account of Dr. Tooley, being closely shut up, both ends were bursted outward, and with such explosive force, that some of the bricks of the windward end were thrown upon a terrace nearly on a level with it, to a distance of not less than twenty feet, in the face of the wind.

3. A brick house on the north side of Main street had its leeward gable end blown out, the windward end remaining uninjured.

4. The windward gable end of a large house adjoining the Commercial Bank, bursted outward in the face of the storm, the leeward end escaping without injury.

5. The gable ends of a large three-story brick house on Franklin street were thrown out with great violence, in opposite directions, and one, of course, against the wind.

6. The leeward ends of two brick stores were thrown outward with violence, while the windward ends escaped. The same happened to the leeward side of a large brick house close by.

7. In the neighborhood of the last mentioned, another brick house had the windward gable end thrown outward.

8. The desks in the Agricultural Bank, which were locked by the president as the storm commenced, were found open shortly after, with their locks bursted. In another instance, the drawer of a bureau was thrown quite out, while the bureau itself was found in its previous position.

9. The leeward walls of two front rooms of the Tremont House were thrown outward with great force, without injuring or disturbing the furniture within.

10. The gable ends of a large brick store on Main and Pearl streets, were blown out; the roof of the fire-proof brick office of the Probate Court exploded to windward; and in a house on State street a large trap door in the roof was bursted open, giving an outlet to the air, and saving the roof.

Hundreds of such facts, it is said by persons who have surveyed the ruins, might be adduced, showing, that where sufficient openings were not afforded to the expanding air, the roof, windows, or some

other part of the house gave way, and most generally to the leeward. A writer in one of the Natchez papers pledges himself to point out to the incredulous, in a walk through the city, *five hundred explosions*—instances in which the violence done can only be explained by the outward action of the atmosphere.

We have a parallel case in the *break-bottle* experiment with the air-pump, in which a thin square bottle, hermetically sealed, is shivered into a thousand fragments, under the exhausted receiver, by the expansion of the confined air. The pressure of the atmosphere over the city was suddenly diminished nearly one thirtieth, as was shown by the fall of the barometer, and rooms containing four thousand cubic feet of air, were thus subjected it has been estimated, to a pressure from within of eighty-six tons more than from without. The consequence was, that the windows were blown out when the walls were strong, and the equilibrium was thus restored; and in garrets, where the air was more confined, trap doors were blown open, or gable ends thrown out with immense force. In some cases roofs were heaved up and removed, and often, as has been shown, walls were shot out in the face of the wind. Garrets being closer were oftener exploded than other apartments which were relieved by windows and doors; and for the same reason brick houses sustained more damage than those composed of wood. And, finally, in the "explosive" theory we have an explanation of the well authenticated fact, that where doors and windows were unclosed, leeward and windward, houses, as was strikingly the case with Dr. Tooley's, escaped all injury. Whatever, therefore, may be the *modus operandi* of hurricanes generally, the conclusion seems irresistible, that in the tornado at Natchez the demolition of buildings was occasioned by the rarefaction of the outer atmosphere, and a corresponding expansion of the air within, equalling the explosive force of gunpowder. Still, there are phenomena connected with the the storm for which nothing but the supposition of "a mighty rushing wind" will account; and such a wind, in fact, is inseparable from the rarified state of the air which led to the explosions. Into the air which thus presented a comparative vacuum, the surrounding atmosphere must have rushed with great violence; and it was this wind that uprooted forest trees, raised the immense waves in the Mississippi, and forced the boats from their moorings.

The quantity of rain which fell during the passage of the tornado,

according to Dr. Tooley, was only 83-100 of an inch, but holding in suspension mud and particles of leaves and other vegetable matter in such quantities as not only to darken the air, but leave a thick coating upon whatever it came in contact with.

Dr. Tooley closes his account of the tornado with a description of some curious effects produced by it upon the leaves and buds of plants: they were in a manner *seared* by it. Those which were not killed outright were crisped, and their growth suspended for ten or more days. Some very thriving grape cuttings in the garden of Dr. T. were killed, and the old vines were also stunted and injured. An arbor vitæ in his yard seemed blighted and dying; the leaves of the succulent morus multicaulis appeared for some days as if an eastern sirocco had passed over them; and fruit trees, grass and weeds assumed the same appearance. Y.

SICK-HEADACHE.

Dr. Burrell, of New York, in a letter to Dr. Alcott of Boston, says, "Not a case of sick-headache has ever occurred, within my knowledge, except with the drinkers of tea and coffee, and not a case had failed of being cured on the entire renunciation of them."

Is this the experience of physicians generally? If so, the fact ought to be known. The use of tea and coffee is almost universal, and it would probably be difficult to find a subject of sick-headache who was not in the habit of drinking them. But is it true, that entire abstinence from them will prevent or cure it? This is the important question, and if settled in the affirmative will go far to prove, that these drinks are the cause of sick-headache.

A lady of our acquaintance in Tennessee who had been for many years the victim of this malady, enjoys now a comparative exemption from it. Her attacks of the complaint were frequent and exceedingly severe. She ascribes her recovery to the use of the *tincture of Lobelia inflata*, which she took in doses of a teaspoonful, whenever she felt the premonitory symptoms of an attack. This quantity was just sufficient to excite nausea, but not to produce vomiting. The improvement in her health occurred about the 50th year of her age,

and may have been the effect of some change of constitution at that period, rather than of the lobelia. The remedy, however, is worthy of trial in this most common and most troublesome affection. Y.

SATURATED ALCOHOLIC TINCTURE ON EUPATORIUM PERFOLIATUM.

When in Galliopolis, Ohio, we were informed by Dr. Hibbard, that he is in the habit of treating ague and fever with this tincture. He gives it in teaspoonful doses several times during the intermission. It is intensely bitter, and neither purges, vomits nor sweats the patient. He has not found the decoction to answer the same purpose. He administers a decoction of Aristolochia Sopentaria at the same time. The Doctor assured us, that he had found this treatment successful in a great number of cases; and it might, he thinks, be made to supercede in a great degree the use of the sulphate of Quinine.

D.

CONGENITAL FUNGUS HÆMATODES.

The first and only case of congenital fungus hæmatodes, or Encephaloid, we have ever seen, fell under our observation, in the vicinity of Athens, Ohio, in a late trip to that town. We were indebted to Drs. Carpenter and Blackstone for the opportunity of seeing it.

The child, a female, was two days old. The disease occupies the whole of the left nates, which is swelled out into a great, shining, globoid tumour; rendered irregular by tuberous elevations. It extends from the perineum, anus and vulva to the sacrum and the spine of the ilium, so as to involve the acetabulum. Its colour is deep red. Many of the cutaneous veins are much enlarged. A portion of the skin had suffered abrasion and considerable hæmorrhage had already occurred. Some parts of the tumour are hard, others soft — the general mass felt hard. It was tender under the hand. In short it had all the diagnostic marks of encephaloid, before fungous growths appear. The child was rather lean but seemed to be in health; and was free from tumors or malformations in any other part. From this case it would appear, that this variety of carcinoma occurs throughout a much more extended period of life

than schirrhus, for we have seen it up to the 50th year — while the latter prevails most in advanced life, is perhaps never congenital and not often a complaint of youth. D.

MILK-SICKNESS.

When lately at Urbana, Ohio, we collected from Dr. Carter, who has practised medicine in that town for more than a quarter of a century, the following facts, relative to the production of "Milk-Sickness," or "Sick-Stomach." Formerly the disease prevailed much more than within the last 8 or 10 years. This, Doctor C. ascribes to the confinement of cows within enclosed pastures. The neighborhood of Urbana presents, at the surface, two geological varieties: first, a true upland level, clayey, and covered chiefly with white oak, the soil thin, and reposing on a compact, arenaceous, ash-grey limestone: second, a diluvial formation, consisting in extensive, level deposites of rolled pebbles, gravel and sand, covered with black, carbonaceous mould, destititute of trees and clothed in long grass. These tracts are evidently the beds of obsolete ponds and little lakes.

As long as cattle feed on the latter, according to the observation of Dr. Carter, the milk-sickness is not produced; when they frequent the woodlands, the disease is apt to occur. But it is not dangerous for them to feed in these natural pastures at *all* seasons of the year. Dr. Carter has never known them nor the people affected before the month of July, and, in most instances, not till August; from which till December is the time of greatest danger. He has never seen a case of the disease in man, that he could not trace up to the cow. Milch cows occasionally die, but on the whole are less liable than cattle which do not give milk. He knows of one tract of woodland three or four miles north-east of Urbana, which has been peculiarly fatal. Nearly all the following facts connect themselves with that spot.

Sixteen or eighteen years ago, a family living near it, had one milch cow, which was suffered to feed upon it. During the first August after their removal thither, and while they were using her milk, the father of the family sickened with the charactoristic symptoms and died; and within a week from his death, the wife and two children, experienced the same fate, from attacks of the same kind

A young man living in the family had, at the same time, an attack of dysentery;—suggesting, undoubtedly, that the *gastric* disease which carried *them* off might have arisen from the same cause which produced *his intestinal* complaint. The cow was seized with the "*trembles*," about the time the children were attacked, and died.

In the summer of 1837, in the month of August, the milch cows of Mr. Taylor, were suffered to range for a week in the same wood, during which they were milked as usual. The milk and butter made from it were eaten. A portion was also manufactured into cheese. Four of the family, two adults, and two children, all of whom had used the milk and butter, sickened with the well known symptoms, and one of the former died. The cheese was "thrown to the dogs"—one ate of it and sickened; and some chickens which picked up fragments of it died.

In the month of October 1839, about twenty cattle escaping from their enclosures near this wood, were allowed to graze, or rather to browse, in it for 6 or 7 days, when several of them were found dead on the ground. The remainder were driven home, affected with the *trembles*. Some of them died the first night, and but one of the whole recovered.

Dr. Carter introduced us to Mr. Hitt, an intelligent and respectable farmer, who lives near Urbana, who informed us that he had lost many cattle by this malady; but has never seen it affect any which did not run at large, nor known it occur earlier in the calendar year than August. Two years ago in that month, his cattle ran abroad and one of the finest of them "got the trembles." He kept her from water, fed her on green corn (maize,) and drenched her with lard, as curative means. Finding that she did not improve in health, he determined to give her drink. After taking a few swallows of cold water, she fell down in convulsions, and to put an end to her sufferings he cut her throat. His two dogs ate of her carcase. In two days, one of them stiffened in his limbs "so that he could not jump over a low fence" and died—the other was affected with the same stiffening, but got well. His hogs, also, ate of the carcase, but were uninjured; but at another time, when he lost four cows, his hogs devoured a part of their carcases, and were destroyed.

We give these facts, with the observation that Dr. Carter is a regularly educated physician, and an honest man. D.

CASES OF PARTIAL PARALYSIS IN CHILDREN.

In the month of June when in Xenia, Ohio, Dr. Templeton afforded us an opportunity of seeing five children affected with partial paralysis. The resemblance to each other, of these cases, and the *simultaneous* occurrence of four of them, induced us to record the following particulars.

Case 1.—Mr. Sheppard's son, aged 15 months, generally enjoyed good health, and could walk very well, when a little more than a year old. About the middle of May, he became costive and fretful, and after a few days had decided fever. Three days after the supervention of the latter, palsy of the lower extremeties came on. It was perfect, that is to say, all power of the will over the muscles seemed to be gone, but the sensibility of the skin remained. The arms were unaffected, but the muscles of the trunk of the body were enfeebled, so that he could not sit up. The fever soon ceased. He took calomel and other cathartics. When we saw him, June 30, the right leg was nearly restored—the left remaining almost motionless. His general health appeared perfect. He had no spinal tenderness.

Case 2.—Mr. Moore's daughter, aged 20 months, was healthy from her birth, and walked when nine months old. In the latter part of May, she became costive, feverish, and was observed to have a weak and husky voice. She now and then screamed out in sleep, and at the end of a week had one spell of vomiting. Suddenly she lost the power of motion in her lower extremities, which for two days and nights were very cold. Their sensibility remained unimpaired. For three weeks, she could not even crawl nor stand; she then began to use the right limb moderately, and at the time we saw her, the left was moved in a slight degree, when the sole of the foot was tickled. An examination of the spine disclosed nothing. Before the paralysis supervened, a few drops of cathartic medicine were administered.

Case 3.—The son of Mr. Charters, 5 years old, was generally in good health, and properly developed both in body and mind, till about the middle of May last, when he was observed to be costive, and complained of headache and sick stomach. A cathartic was administered and he got better; but in a week he was again costive and feverish, with a dry husky cough. Cathartics were again exhibited

and were found to operate very tardily. In a few days it was observed, that when placed on his feet his legs were nearly paralysed, and he seemed to experience pain. Worm medicines, and calomel as a cathartic, were administered freely. No worms were discharged. In a few days he made efforts to walk, when assisted, but turned his toes outward, and dragged his feet. When we saw him, June 30, this debility and dragging still continued, but he was much better. It should be stated, that previously to the attack, his appetite was voracious and that he ate a great deal of meat.

Case 4.—A daughter of the same parents, aged 10 months, had been generally in good health up to the middle of May, when she became costive, irritable and feverish. The gums of the middle upper teeth, in front, being tumid and red, were cut. In a few days she partially lost the use of all her limbs, and the movements of her head were greatly weakened. Her voice was feeble and husky, and she had a short, dry, hoarse cough. The debility of her limbs increased; but in a day or two began to abate in all but the left leg and arm, which became nearly motionless. At the time of our examination, she had begun to move her limbs on that side a little—chiefly however by the flexor muscles, the extensors seeming to be entirely paralysed. Dr. Templeton could detect no spinal tenderness. She was treated with cathartic medicines, and was manifestly convalescent when we saw her.

Case 5.—Another, 3 years old, was shown to us, who in infancy was healthy, but when she began to use her hands and feet, it was observed that those of the left side were exceedingly inactive and feeble, compared with the others. When 20 months old, she began to walk, but still does it imperfectly—presenting her right side and dragging her left foot, with the toes turned a little out. Her fingers of the left hand are perpetually flexed. She often opens them with her right hand, so as to grasp what she would hold. She cannot protrude her tongue beyond her lower lip. The saliva drivels from her mouth, and in masticating, a portion of the food escapes from its corners, particularly the left, but she has no retraction of the right. She articulates very few words. Her mind is shrewd—her observations acute—her temper irritable—her communication with those around in a great degree pantomimic.

She was never subjected to any medical treatment. The mother

of this child had a brother affected with epilepsy. No other nervous disease in the family.

The occurrence of three of these cases, so much resembling each other in the family of Charters, would seem to indicate a family predisposition; while the occurrence of two cases in his family, one in Shephard's and one in Moore's, nearly at the same time, the whole in one street and within a few squares of one another, would appear equally to indicate a common cause. What that cause might have been, is not known. Dr. Templeton, at first suspected that the children of Charters had been injured with lead, as he worked more or less in paints, and as the constipation, and the paralysis of the extensor muscles, appeared characteristic of the impress of that metal. When two other children, however, in two neighboring houses, were found to labor under the same affection, that theory was relinquished. D.

MEDICAL MISCELLANY.

Dr. THOMAS W. COLESCOTT, of Cincinnati, is engaged in translating the admirable work of *Dr. Civiale*, on *Calculous Affections*, recently published in Paris. The work will be ready for the press early in the winter, and from the ability of Dr. C. there is every reason to believe that the translation will be well executed. It will be comprised in an 8vo. volume of about 500 pages.

Medical College of St. Louis.—A medical department has been attached to the Kemper College, of St. Louis, under the charter of that institution. The Faculty has been organized, and consists of the following members: Joseph N. McDowell, M.D., Professor of Anatomy and Surgery; J. W. Hall, M.D., (late of this city,) Professor of the Theory and Practice of Medicine. Hiram M. Prout, M.D., Professor of Materia Medica and Medical Botany. John S. Moore, M.D., Professor of the Institutes of Medicine and Obstetrics. John De Wolf, M.D., Professor of Chemistry and Pharmacy.

The work of Professor Gross, on Pathological Anatomy, has received the commendation of all the leading Journals of the country—a Review of it has been prepared for our next number.

We have received, from Professor Beck, the Transactions of the Medical Society of the State of New York, for 1839 and 1840, which we shall notice in an early number. Y.

THE

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OF

MEDICINE AND SURGERY.

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THE

WESTERN JOURNAL

OF

MEDICINE AND SURGERY.

AUGUST, 1840.

ART. I.—*Observations on the Treatment of Spina Bifida.* By AMASA TROWBRIDGE, M.D., Professor of Surgery in Willoughby University, Ohio.

IN the Western Journal for May, I noticed some suggestions in relation to a new and different mode of treating Spina Bifida from those heretofore practised, which induce me to make this communication. Much observation and practice in this disease have convinced me, that it is important for surgeons to possess a correct pathological knowledge of the nature and formation of these tumours before they attempt their cure, or adopt any mode which may be suggested or practised for that object.

In 1829, I reported in the Boston Medical and Surgical Journal, (Vol. 1, No. 48,) three cases of spina bifida cured by operations. The cases with the modes of proceeding with each, were particularly detailed. In two of the cases, the tumours were removed by ligature, and in one by incision. I remarked in that communication, that I preferred the ligature in all cases where the base of the tumour admitted of its application—applied in the first place tight enough to produce moderate inflammation; after this the patient did not suffer as much in bringing it so tight, as to destroy all circulation, and its sympathetic effects were much diminished. I further remarked, that in making that communication public, I did not wish it to be understood, that I believed that all cases of spina bifida could be cured by any mode of treatment. I knew there were many that would soon destroy the child, and some that proved fatal even at their very birth, by being torn off in that process. Three cases of the latter I had witnessed. I also stated that I had seen about thirty cases, and had seen them situated upon every portion of the vertebral column, from the occipital bone to the sacrum, of various sizes and appearances, and had made many attempts to relieve the unhappy sufferers from their embarrassments, by puncture, compression, ligature, incision, et cætera, and that I had failed in my attempts in many instances; but that after all, I believed there were cases that could be cured, and that the surgeon, if he made the necessary distinction in the cases, might venture with as much assurance of success as he could in other maladies that required operations.

It is generally supposed that all cases are alike—that there is a communication from the sac, or outer cavity, through the spinal canal to the brain; but this is not the fact. There are cases where the opening through the vertebræ does not ex-

tend far into the canal, and where the spinal marrow is not compressed by fluid, or deranged in its functions; and many of these cases may be cured by surgical interference.

The external tumour in these cases, is generally covered entirely with integuments, and appears very firm, is not easily compressed, very elastic to the touch, and yet fluctuation is perceptible. In this case, the dura mater is the only lining membrane of the cavity in the tumour, and the fluid contained in this does not extend far in the canal after passing the aperture in the spinous apophyses. In the other cases, and these are much the most frequent, there is a thin, almost transparent membranous covering on many parts of the tumour, and sometimes on the greatest portion of it. The tumour is easily compressed, and the subject is generally attended with loss of voluntary action in some of the muscles, and sometimes with derangement in the secretions. Here the fluid is contained in the cavity of the arachnoid membrane, and may extend the whole length of the canal; and M. Bichat and other anatomists assert that it can extend even to the lateral ventricles of the brain. I have seen cases where the head was enlarged in a manner similar to what takes place in cases of hydrocephalus. These cases will soon prove fatal under any treatment that I have seen adopted. Since I reported the cases referred to in the Boston Journal, another has passed under my treatment, equally interesting, which goes to establish my views about these cases.

Miss M. Brayton of Jefferson county, New York, of a very respectable family, aged 25, was born with a tumour over the two lower lumbar vertebræ of considerable size and protuberance, which was pronounced by several medical gentlemen of eminence to be spina bifida. It was so large and so distinctly characterized at this time, that they predicted the child

would live but a few weeks. She however continued to live in this state without much constitutional derangement or local suffering, except feebleness, during the first twelve years. The tumour enlarged in proportion to the growth of other parts of her body. From this period to the time when I first saw her, at the age of 25, she was occasionally troubled with extreme pain in the cerebral region of the head, and much disturbance of mind, attended with a vertigo and confusion of mental powers, and some neuralgic symptoms over the whole body. She was of the phlegmatic temperament and possessed a mind that was retiring and delicate. The secretions of the system were natural, and no delay was experienced in the usual infantile developments, either physical or mental. She was of the middling stature, and had the perfect use of all the muscles of the body. A family physician attended her during the paroxysms of pain and nervous excitement mentioned, but was ignorant of the real cause of these symptoms. He treated by bleeding, cathartics, opium, et cætera.

The tumour enlarged and the symptoms were continued till I was consulted in her case. The tumour was fifteen inches in circumference, covering the upper portion of the sacrum and four of the lumbar vertebræ, of a conical form, rising about seven inches, covered with integuments, and distended with fluid. She had managed by adjusting her clothes so as to keep the deformity from being much noticed. While riding in a carriage she was injured and put in pain by having the tumour pressed against the seats, and always afterwards suffered with the symptoms mentioned. Walking or whatever exercise fatigued her much, uniformly produced lassitude and nervous excitement. She had suffered from the great enlargement and the concussion of the tumour for several months anterior to my seeing her, more than at any pre-

vious period. Indeed she was reduced to a state of constant danger and distress. I advised an operation, which was made by dividing the upper portion of the tumour with a scalpel about five inches, encircling the prominent portion of integuments within two elliptical incisions. Twenty-two ounces of fluid were discharged, carrying the appearance of the purest alcohol. On standing till cold, it had no appearance of serum or lymph, but was more like distilled water. These incisions, and the removal of parts, exposed the interior and bottom of the tumour. It was lined with the dura mater distended and enlarged with the fluid mentioned, two of the lower spinous processes were wanting; a cavity was presented, and the spinal cord, in its natural position, and covered with the pia mater, was perceptible.

The divided parts were brought together by adhesive strips, and compresses being laid on a bandage was applied. She suffered but little by the operation, except the former symptoms from concussion; these were great for a few minutes. There was a constant secretion and discharge of fluid, from the parts for the first five days, with neuralgic symptoms, and increased arterial excitement, which were mitigated by large doses of morphia and warm fomentations, over the spine. The suppurative process took place freely about the tenth day, and a union of the parts followed, with a mitigation of all the symptoms. A sound state of the parts, with a depression of the integuments over the deranged portion of the spine, followed, and she has enjoyed good health up to this time, which is eight years. This tumour carried with it from the birth of the individual the appearance of those which I have described as curable. If my conclusions are correct, these "cysts," as "D." terms them, have secreting surfaces, and would not be

likely to unite with a coagulum, or fibrine, deposited within the sac. Would the coagulum adhere, without inflammation, to the surrounding tissues?

Painsville, Ohio, July, 1840.

ART. 11.—*Remarks on Scarlet Fever, as it occurred in Calloway Co., Ky., in* 1838. By DR. W. SCOTT LAWRIE, of Ky.

IN the following article I shall not attempt a labored dissertation on scarlet fever, but shall endeavor briefly to describe the symptoms and mode of treatment pursued during its prevalence in the county of Calloway, Kentucky, in the spring and early part of the summer of 1838. The winter had been unusually severe, and it was early in the spring that this formidable disease commenced its ravages. Its appearance created much alarm, the general impression that it was contagious pervading almost every family; and in some instances so great was the dread of spreading it, that the assistance so necessary among neighbors in times of sickness, was most inhumanly withheld, and a case or two occurred where barely sufficient force could be mustered to pay the last sad offices to the dead.

No disease with which I am conversant, is more appropriately named than "Scarlet Fever," a solitary symptom serving at once to develope its character. Its presence was variously intimated, at times being ushered in by rigors or slight chills, with redness of the eyes, pain in the head, heat, redness, and dryness of the skin, and difficulty of respiration; while again the *rash* itself, though not generally appearing

until between the third and fifth day, was the first symptom manifested. In some other cases, soreness of throat was the symptom first complained of; and again, fever, redness of the eyes, the peculiar appearance and elevation of the papillæ of the tongue, resembling the seed of the strawberry, (a diagnostic in the cases of both black and white patients,) cough, wheezing, with a rattling of mucus in the throat, and redness and swelling of the fauces, were the symptoms which presented, in others.

These are the symptoms which usually came under my notice. The indications which they suggest are, first to abate the violence of the fever, and, secondly, to promote the cutaneous afflux or centrifugal tendency, scarlet fever, like all other eruptive diseases, being safest when it comes fully out upon the skin. Upon being called to a case in the commencement of an attack, and finding the usual symptoms attendant, particularly heat and redness of skin, with headache and difficult respiration, I endeavored to meet the first indication by abstracting blood freely from the arm, and in such a quantity as to satisfy me, that an impression had been made upon the symptoms manifested. Bloodletting as a remedy in scarlatina, I am aware, is not sanctioned by some of the profession, while by others it is as much extolled. Dr. McIntosh states, that for a good while he was opposed to it, but that upon finding so many of his cases snatched from an untimely grave, by *a spontaneous bleeding* from the nose, he determined upon a change of treatment; and at the time of his death he was an advocate for v. s. in this disease. So clear an indication of nature was not lost upon such a man as Dr. McIntosh.

The soreness and rattling in the throat, and the hurried and laborious respiration, would at once proclaim the propriety and necessity of an emetic, and, more particularly, should

the cutaneous afflux be tardy in its appearance. Emetics, from their peculiar mode of operation, having a direct tendency to the skin, are very essential in the treatment of scarlatina, while cathartics, in their nature, are the reverse. An emetic in the onset, according to my experience, is the most effectual step towards cutting short the disease, and I am inclined to give the preference to tartar emetic over all the other articles of this class. In all the cases which have fallen under my care, I have used this remedy, and in only two have I seen it run off by the bowels, the objection urged against it, and in these, it failed to vomit altogether. In one instance only have I administered ipecac, and then, combined with calomel, it answered remarkably well. In the same family in which I gave it, I had six other patients all of whom took the antimonial and recovered.

To an abuse of any medicine I am opposed, and to none more than that of calomel as a purgative in scarlatina. Cathartics, I have stated, have no cutaneous tendency, and calomel least of all, being a permanent irritant of the mucous membrane of the alimentary canal, and reducing during the time of its operation the functions of the skin, which are in an inverse ratio to the peristaltic action.—In this disease the bowels are frequently sluggish and torpid, and that they should be opened, there can be no doubt; but that they should be moved by calomel is by no means certain. A majority of cases, in my opinion, will be as well, if not better managed without calomel, Epsom salts, and calcined magnesia, or rhubarb and magnesia, having with me done admirably well.

When the heat and dryness of skin continue after the stomach and bowels have been operated on, and the eruption is still tardy, or appears but partially, I have been much aided by the warm bath, either by immersion, or by pouring water

from a vessel upon the body. Even sponging the body with warm water is of much benefit. The bath better than almost any other measure allays that restlessness so often attendant, and puts an end to the irritation of the skin, while at the same time it reduces the excessive temperature, promotes perspiration, and adds much to the comfort of the sufferer.

Cataplasms have also aided me much in the management of scarlet fever. A poultice of light-bread and milk, with the addition of cayenne pepper, has been usually employed. The temperature of the body is in many cases very unequally distributed, that of the abdomen being often preternatural, and in such instances a poultice covering the entire bowels will be found highly beneficial.

The testimony concerning vesication in this disease is conflicting. My own experience is favorable to it. In three or four cases, at least, I am confident that I obtained much advantage from the use of blisters; and I am not sure, that to them alone three of my patients are not indebted for their lives. In two of them, deglutition seemed impossible, and any liquid taken into the mouth was at once ejected through the nostrils. To the first I was called in much haste about 10 o'clock, P. M. The subject was a remarkably stout and healthy young woman, who had been for a few days convalescent, and had on that day been unfortunately exposed to a light shower of rain. I found her in extreme distress; her pulse full and bounding, skin hot and dry; much disturbance about the head, throat painful, and a good deal swollen. My efforts at v. s. failed entirely—the light was a bad one, and the patient being very fleshy, after two or three ineffectual attempts I abandoned it. Tartar emetic was forthwith administered, half a grain every fifteen minutes, but failed to induce emesis, the irritability of the bowels being such that

it passed off that way. The effect of the watery stools thus procured was to exhaust the patient. The affection of the throat seemed rather to increase, and a poultice of light-bread and milk was prepared and applied as hot as could well be borne. From this some relief was obtained, and as she was kept in a state of nausea by a preparation of squill, and vin. antimon. combined with paregoric, some improvement was observable. The bowels had been acted upon by gentle cathartics, and I thought she was about to recover, when upon calling on the evening of the fourth day, I found her worse than ever. The poultices had been steadily continued, yet still the pain and swelling of the fauces, and the difficulty of deglutition were worse, and my apprehensions for her safety were much excited. A large blistering plaster was applied to the throat, and a strong decoction of cayenne pepper prepared, of which she was prevailed upon to drink freely, and under this plan of treatment, with due attention to the bowels, her health was restored. While in this, and some other cases, I am of opinion that vesication was productive of good, I am by no means prepared to say, that the practice should be generally adopted; on the contrary I look upon the cataplasms as safer, and as free from the objections so justly entertained against blisters. In my practice the epispastic has usually been employed after poultices and sinapisms had failed to secure the desired ends; and while I admit a doubt as to the general utility of vesication in this fever, I would unhesitatingly employ blisters, and risk gangrene, and the whole host of evils to which they are supposed to be accessary, before I would lose my patient without making the experiment.

Gargles I believe may be omitted. The cayenne pepper so prepared as to be comfortably swallowed, is a valuable adjuvant in the treatment of scarlatina, of which I have made

much use, and which I can safely recommend. That the dryness of the skin should be obviated is very desirable, and this I have generally been able to effect by the use of the cayenne, and a preparation of vin. antimon., spt. nit. dulc., and paregoric, giving the pepper tea without limit, and, of the other, a teaspoonfull every hour, unless it acted too freely upon the stomach, in which case the time was prolonged.

Thus I have communicated the treatment pursued by me in the scarlet fever of Calloway county, and I may state, as the result, that out of some fifty cases thrown directly upon my hands, I lost but two, where the course of cure was begun by myself. Many received directions whose cases I never saw and were relieved; while others, laboring under the impression from having observed the great fatality of the disease elsewhere, that but little could be done by medical treatment, made no application for aid, until help was beyond reach, and thus cases were lost, two and three in a family, which by timely and judicious aid might have been saved.

The subjects of the fatal cases to which I have alluded were stout, robust children, one of them my own, whose sufferings were most intense, and upon whom no effort of mine made any impression. The brain became most deeply involved, and a heavy coma supervened, out of which I was unable to arouse her. The death of the other, from the peculiar formation of the child, I predicted while it was yet in health, should it become the subject of the disease. Every practitioner must have observed, that children of robust forms, short necks, and large heads, are the least likely to recover from scarlet fever.

The congestive form of scarlatina is not of very common occurrence, and out of the entire number of my cases, I am not sure that more than two were of that character. In one

of these, the eruption never did fully appear. The child was sick some time before I saw it, was finally thrown upon the hands of another practitioner and lost, he with myself having failed in any manner to aid it. My experience in this form of the disease having been so limited I shall not pretend to speak of the best mode of treatment, but would simply remark, that while in inflammatory scarlatina I have dispensed with calomel, I should regard it as the most valuable remedy in cases of a congestive type.

In two instances I have met with a feature in this disease, that I have not seen described, which it may not be amiss to mention here. These patients were both convalescent, and one of them was able to leave the bed. They were taken with violent spasms of the forearm and hands; the contractions were very strong, and the suffering most excruciating and obstinate, not readily yielding to the means exhibited for its alleviation.

June, 1840.

ART. III.—*A case of Fracture of the Cranium, with wound of the Dura Mater and loss of Brain.* By A. H. BUCHANAN, M.D., of Columbia, Tennessee.

ON the 27th of August 1824, a boy aged 8 years, was found in a horse lot apparently lifeless, with a deep wound in the left temple, extending from the anterior part of the ear to the external corner of the eye. It was supposed, that he had been kicked on the head by one of the horses in the lot. I saw him about six hours after the accident, and upon examination found the temporal muscle greatly lacerated and bruised,

and entirely cut through, down to the subjacent bone; and discovered in the wound several small portions of brain. The left eye was much injected with blood, and the eye-lids were swollen and livid, and the pupils widely dilated. The pulse was full and slow, and the patient slightly comatose. Upon dilating the wound with the scalpel, I found the anterior inferior angle of the parietal bone, and the adjoining portions of the temporal and frontal bones, to the size of half a dollar, fractured and depressed. The dura mater was pierced by a spicula of bone, and several portions of brain, about the size of a pea, were perceived lying on its surface. The cheek bone where it unites with the zygomatic process of the temporal bone, was also fractured and depressed. The portions of cranium which were depressed being entirely loose, were removed by a pair of forceps; which left exposed the wounded dura mater, the middle artery of which now bled freely, but soon ceased without any application. The cheek bone being properly adjusted, the lips of the wound were brought together by three stitches, and by adhesive strips; a compress was placed upon the wound and retained by a bandage drawn firmly about the head.

The boy complained but very little during the operation—being during the greater part of the time in a state of stupor. After he was put to bed he remained in a comatose condition for two days, with full, slow pulse, about 60 in the minute, and pupils dilated; but during this time, if roused up he recognised his acquaintances, and was sensible to all external impressions. He was bled freely, on the second day, and purged with Epsom salts; during the following night he complained at times, of some pain in the wound. Suspecting that the pressure from the compress and bandage might be too great, it was diminished a little, and in the morning on rais-

ing a corner of the adhesive strips at the lower end of the wound, a free discharge of pus took place. The pulse being full and slow he was again bled, and also purged with salts. The accumulation of pus in the wound occasionally produced some pain, but when he complained it was always evacuated, which relieved him. From this time, by keeping the bowels open with salts or oil, and restricting him to the lightest of diet, he gradually recovered, and in four weeks was walking about the house. No untoward symptom occurred afterwards.

The boy, I suppose, lost about half an ounce of brain, which as far as I could discover did not seem to affect his intellectual faculties, and his father is of opinion, that his mind is not injured. His mother, however, is quite sure, that his memory is not so good as before the accident. The case I consider worthy of reporting, because it gives additional evidence to the cases already on record, that a wound of the dura mater, with loss of brain, is not necessarily fatal, nor always followed by fungus cerebri. It is highly probable that the firm support maintained by the compress and bandage, in this case, during the cure, and even for several weeks after the external wound had healed, was the most efficient remedy in preventing the fungous growth so apt to occur under such circumstances.

July, 1840.

ART. IV.—*A Case of Chronic Enlargement of the Spleen, with Remarks.* By RICHARD R. DASHIELL, M. D., of Tennessee.

THE case which I am about to relate is one of not very unfrequent occurrence in this State. I allude to the chronic enlargement of the spleen, succeeding an attack of intermittent fever.

Elizabeth Harris, æt. 36, was subject to periodical attacks of ague and fever for fifteen years, and upon the cessation of this disease, about six years ago, she complained of pain in the left hypochondrium, which extended to her back; from which time the spleen increased in size until it has attained its present dimensions. She has been pregnant five times, and at the last accouchement gave birth to twins, from which time the pain in her left side increased. When I first saw her, she had that peculiar hue of skin which often follows tedious intermittents, and which those who have seen it will always recognise. This color is easily distinguished from the hue of slight jaundice—it is what is usually termed a clay-colour. She had cough, general debility, loss of appetite, pain in the head and back, periodical blindness, vertigo, constipation, loss of sleep, sometimes for a week at a time; her catamenial discharge was irregular, being frequently merely a show, and then entirely suppressed. She had no fever; pulse was rather slow and regular; her belly enormously tumefied. Upon first inspection, I accused her of being pregnant, which imputation she resented warmly, as she had been separated from her husband for six years. On a more minute manipulation, I found that the abdominal tumefaction did not depend upon the presence of a fœtus in utero, or of

fluid in the peritoneum, but was produced by enlargement of the spleen, and was a case of what is vulgarly called 'Ague Cake.' The tumour was remarkable for its dimensions, occupying more than one-half of the abdominal cavity, and extending to the spine of the ilium. Judging from the impression it gave through the integuments, it must have been three or four inches thick. At one time she describes it as having been as large as "a clever sized watermelon."

As there was tenderness upon pressure, I applied three cups over the splenic region, and recommended a light diet, in addition to which, I directed a blue pill every other night. The pills were continued until the tenderness was removed, when I inserted two setons, which produced rapid diminution of the enlargement, and a perfect cure, so far as the spleen was concerned.—With respect to tonics, I found them of great service. I used a 'decoction of the woods,' with supertartrate of iron. They no doubt gave vigor to the constitution, which had been impaired by long ill health, and tended to promote the absorption of the morbid products, on which the elargement chiefly depends.

In conclusion, I would offer the suggestion, whether the reason why enlargements of this viscus from *sanguineous engorgement* are not more frequently cured, is, that they are confounded with enlargements arising from *inflammatory action*, which have resisted all the means of treatment devised for their cure by the 'masters of the healing art.' The latter, or enlargements arising from inflammatory action, are generally hard to the touch, and are always more or less painful—on manipulation they present the feeling of *induration*, though sometimes only in spots, particularly in the inferior and left lateral portions, the right being free from any appreciable lesion. On the contrary, enlarge-

ments arising from sanguineous engorgement, have a soft, spongy, elastic feeling, during the absence of febrile excitement, whilst during the progress of the fever they impress us with the sense of *distension*, and not of hardness.

Chronic indurations of the spleen have resisted every plan of treatment. Iodine and mercury used in every form, have been alike unsuccessful. Temporary relief only has been afforded by cupping or leeching, low diet, change of residence, mineral-water bathings, keeping the bowels free, and wearing the tartar emetic plaster over the left hypochondrium. On the other hand, *chronic enlargements* of the spleen are capable of reduction by adopting a hygienic course of living, by strengthening the system by the exhibition of tonics, by an alterative course of mercury, and finally, by the use of the seton. It is this condition of the spleen alone that yields to a judicious treatment, while all others remain the opprobria of our art.

July, 1840.

ART. V.—*Observations on Milk-Sickness.* By JOHN TRAVIS, M. D., of Carroll County, Tennessee.

Whenever a new disease occurs among mankind or the inferior animals, and its remote cause cannot be clearly demonstrated, the floodgates of imagination are thrown open, from which thousands of conjectures flow, some of which are of the most absurd and ridiculous character. Such was the case on the appearance of Asiatic cholera. It is the duty of the physician to examine, to write and to think of diseases,

in a *rational* manner. It ill comports with the character of medical science in this enlightened age, to trace the origin of diseases to the influence of the sun, the moon, and the stars. I have as much faith in the judicial astrology of the Romans, or Hesiod's theory of the origin of the world, as I have in such notions.

That milk-sickness exists in certain localities, I cannot for a moment entertain a doubt. It has made its appearance annually in Carroll county, and some of the adjacent ones, since the first settlement of the Western District of Tennessee. Many instances of death among horned cattle have occurred in this county, and dogs feeding upon their dead carcases have become diseased, and some have died. My own dogs have had the disease in such a manner as to render them unable to walk, by feeding on a dead cow. Several persons of this vicinity have had the disease, and some have died of it. They have had the whole train of symptoms described by Professor Yandell in his essay on milk-sickness, in the Transylvania Journal of Medicine, vol. I, No. 3. I have invariably pursued the course of practice suggested in that essay, in the management of the cases that have come under my care.

The great concern of the physician is to obviate the constipation that exists, which is often of the most obstinate character, and with the removal of which the nausea, vomiting, and other distressing symptoms generally yield. Whether the relief from cathartics be owing to the removal of the poison of milk-sickness from the primæ viæ, or to the restoration of the alvine secretions, is a matter not yet decided among practitioners, but of the efficacy of these remedies in the disease, no one who has had experience in it entertains a doubt. Venesection in the early stage is useful, not only in calming the symptoms, but in promoting the operation of

the cathartic. The gastric irritation continuing after the use of the lancet and purgatives, a large blister is applied to the epigastrium. Sinapisms to the extremities are beneficial in equalizing excitement, and affusions of cold water answer a similar purpose when much heat of the surface is present. In a word, the treatment does not differ materially from that pursued in bilious fever, except that constipation being a more prominent symptom will require more attention. That being obviated, the disease in most cases becomes sufficiently manageable.

It may not be uninteresting to state a remarkable fact which has occurred under my own observation; it is, that my own cattle range with those of my neighbors, and have done so for five years, and none of them have ever had the disease, while many of theirs have died. I am strongly inclined to believe, that this exemption is owing to my giving my cattle salt every other day, during the spring, summer and autumnal months, whereas other cattle get salt perhaps once a month. From this fact it would appear, that the muriate of soda, (common salt,) acts as a prophylactic of the disease.

A range of hills of considerable elevation runs up from near my mills on Sandy river, westward, between which are fertile valleys. In these ravines cattle often range, and, it appears, also contract this disease. In these valleys abounds the Rhus radicans, upon which cattle sometimes feed. From certain experiments made, some years ago, by a gentleman near Cincinnati, there appears some reason to believe, that a small poison vine, a species of the *Rhus*, will cause milk-sickness. He had a number of cattle in a lot, in the winter season, where the vine grew; he observed them to eat of the vine, contract the disease, and die. He removed the vines and put other cattle in the same lot, which escaped the dis-

ease. This is the fairest experiment that I have ever known made, and it certainly should have considerable bearing upon this interesting and obscure subject. I intend at an early period to make experiments with the poison vine growing in this region, and will communicate the result to the Editors of the Western Journal.

I am aware, that great discrepancy exists among physicians respecting milk-sickness, some even denying its existence, *in toto*, and others deeming it nothing more than a form of *congestive fever*. It certainly bears a remote resemblance to congestive fever; but by certain diagnostic symptoms, pointed out in the essay to which I have referred, the discriminating physician can never be at a loss to distinguish one disease from the other. The remote cause of milk-sickness being buried in obscurity has no doubt induced many to question its existence. Such persons might as well doubt that man has a spleen, because the most acute anatomists have not yet discovered its use.

July 11*th*, 1840.

REVIEWS.

ART. V.—*Crania Americana; or a comparative view of the Skulls of various Aboriginal nations of North and South America: To which is prefixed an Essay on the Varieties of the Human Species. Illustrated by seventy-eight plates, and a colored map.* By SAMUEL GEORGE MORTON, M.D., Professor of Anatomy in the Medical Department of Pennsylvania College at Philadelphia; member of the Academy of Natural Sciences of Philadelphia; of the American Philosophical Society; of the Historical Society of Pennsylvania; of the Boston Society of Natural History, &c., &c., Philadelphia; J. Dobson, Chesnut street. London; Lumpkin, Marshall & Co., 1839. Letter press, p. 296, folio.

IN the last number of the Journal a promise was given, that, on renewing our remarks on this distinguished work, which, though the production of an individual, might well be called NATIONAL, we should endeavour to enrich our notice of it, with a greater amount of the special and detailed information which it contains, than was introduced into our former article respecting it. And our promise must be redeemed. In effecting this redemption however, it is not our intention to deal exclusively in specialties and details. We shall not lose sight of those great principles of science, nor fail occasionally to refer to them, which constitute an essential element of liberal knowledge, and without which *science* would deservedly forfeit its name and character, and degenerate into disjointed and common-place intelligence.

In a special manner we shall not fail to bear in mind that fundamental and all-controlling truth in physiology, whose influence and value have been heretofore too little attended to, and too lightly appreciated, especially by anthropologists—that the *nervous* is the *master-tissue* of living organized matter, and that that portion of it called *the brain* is chiefly instrumental in creating distinctions between human individuals, as well as between varieties and races of men; and in giving to some of them a decided and permanent superiority over others. For, as intimated on a former occasion, that truth, when skilfully and ably employed, is calculated, far beyond any other, to shed light on the history and philosophy of man. Nor is its influence limited to the past and the present. To a certain extent it is also instinct with a spirit of foresight, and fitted to lift the curtain suspended in most cases between mankind and the future, and disclose to them somewhat of the destiny that awaits them.

Our reason for entertaining this opinion, which we know will not be likely to be favoured, at first view, with the belief of the *multitude*, may be succinctly stated. We can foresee what man would be, were he converted, by a well-conducted and thorough course of education and discipline, into a truly *rational* and *moral* being—were all his *higher* and *nobler faculties* we mean, so strengthened and trained, as to have the complete control of his inferior faculties, and his will so predominant as to have a corresponding mastery over *them.* And we can foresee what the condition of the world would be, were it peopled with beings so elevated and excellent. But were time allowed us, and were the discussion a suitable one for the present occasion, it would be easy to show, that a complete knowledge of the brain and nerves, and of the best scheme of exercising and improving them, would enable

mankind to produce in the world the state and condition of things, to which we have alluded. And that such knowledge and scheme, in no very limited degree, will be, in time to come, one of the products of phrenology, is highly probable. The future then, under such circumstances, is in part at least revealed to them. Though they have not obtained possession of the land of promise, they enjoy an antepast of it in prospect from the Pisgah they have ascended.

Such a view of things cannot, we think, be regarded as either fanciful or extravagant. Far from it. Founded on acknowledged truth, and constructed of sound materials, it cannot be otherwise than substantial and lasting. But we must proceed, without further preface, to our task of analysis.

In our article contained in the preceding number of this Journal, it was observed that Dr. Morton commences his work with an "Essay on the Varieties of the Human Species." And, for its extent, it is decidedly the most interesting and instructive we have ever perused. It contains the result of much and varied reading and research; its matter, though compressed within the narrowest limits, is rendered perfectly intelligible, by the simplicity, plainness, and perspicuity of the style; and, added to its historical information, it is interspersed with many striking and valuable remarks.

Alluding to the extensive, if not *universal* population of the earth, at the earliest epoch known to history, the writer correctly states, that "the *oldest records* seldom allude to an *uninhabited* country." Yet do some of those "records" go back to within a few centuries of the flood, and still find populous, powerful, and even cultivated nations. Indeed, according to our most accredited systems of chronology, within a single century and a year after the subsidence of the deluge, the east was sufficiently populous, and the inhabitants suffi-

ciently versed in the mechanical arts to erect the tower of Babel—a building believed to be superior in magnitude, and vastly superior in grandeur of design, to any architectural monument subsequently attempted. In about twenty-six years afterwards the Chaldean monarchy was founded by Nimrod—and in fourteen years more the Chinese monarchy, by some of the master spirits of the time. These facts bespeak an increase of the human family, at that period, far surpassing in rapidity any thing the world exhibits at present.

Dr. Morton farther states, with equal correctness, and as an evidence of great *antiquity* of residence, that so strong is the attachment of each variety and people to their own dwelling places, that they greatly prefer them to all others. "Thus, says he the Eskimaux, surrounded by an atmosphere that *freezes mercury*, rejoices in his snowy deserts, and has pined in unhappiness when removed to more genial climes. On the other hand, the native of the torrid regions of Africa, oppressed by a vertical sun, and delirious with thirst, thinks no part of the world so desirable and delightful as his own." So truly might the poet have sung of the predilection for home inherent in the inhabitants of every region, whether hot or cold, parched or humid, as he did of that which he represented to be so vivid and glowing in those who are born and reared amid polar snows, and immediately beneath the path of the sun.

> "The shuddering tenant of the frigid zone,
> "Boldly proclaims the *happiest home* his own,
> "Extols the treasures of his stormy seas,
> "And his long nights of revelry and ease;
> "The naked negro, panting at the line,
> "Boasts of his golden sands, and palmy wine;
> "Basks in the glare, or stems the tepid wave,
> "And thanks his gods for all the good they gave."

Again says our author; "From remote ages" (he might have said the *most remote*) "the inhabitants of every extended locality have been marked by certain physical and moral peculiarities, common among themselves, and serving to distinguish them from all other people. The Arabians are at this time precisely what they were in the days of the patriarchs; the Hindoos have altered in nothing, since they were described by the earliest writers; nor have three thousand years" (he might have extended the period to three thousand *five hundred*) "made any difference in the skin and hair (and he might have added *features*) of the Negro. In like manner the characteristic features of the Jews may be recognized in the sculpture of the temples of Laxor and Karrak, in Egypt, where they have been depicted for nearly thirty centuries."

Throughout this whole passage, the writer has restrained himself not a little *within* the limits to which he might in verity have carried his account of the stubborn permanency of the human complexion, features, and figure. Documents not to be controverted can be adduced to show, that *six-and-thirty hundred* years ago, the Jews in Egypt bore, in every characteristic trait of person and countenance, the most striking and precise resemblance to the Jews of the present day. Neither their residence in Palestine, nor their subsequent banishment and dispersion into every climate, situation, and country, has produced in either their personal figure, the form of their head, the colour of their skin, or the lineaments of their countenance any well-marked or even perceptible change. All these facts, and many others that might be easily detailed, speak to the same effect. And they testify conclusively to the immense antiquity of the crowded population of the earth, and the absolute impossibility of specifying any

natural causes, physical, moral, or intellectual, capable of producing the numerous, immense, and dissimilar alterations in man, requisite to change and diversify him from *unity of origin* into the now-existing and strongly-marked varieties and races. And all attempts to that effect have not only failed to do good, by the discovery of truth in history or science, but have done positive mischief, by giving a wider scope and deeper inveteracy to error and prejudice. For the sake of religion therefore, as well as morality, unsophisticated reason, and sound philosophy, researches of the kind should be discountenanced and abandoned. No natural causes now in existence have the slightest tendency to change one race of men into another—or even *one variety of the same race into another.* All efforts made to propagate hypothesis in opposition to this, do violence to truth, and give countenance to error—and are therefore necessarily of pernicious tendency. For error of every description is a positive and never-failing source of evil. Nor are these remarks designed to have the slightest bearing on the doctrine of the *original unity of man.* They relate exclusively to the *causes of his diversification.* And we reiterate our thorough conviction, that nothing short of the POWER which created him could have produced the change.

To render his readers the more familiar with the climates and localities of the different races and varieties of man, Dr. Morton has prefixed to his work a well prepared map of the earth, indicating by different shades of colour, the places of dwelling of the several races.

The effect of an examination of this map is singular, and exhibits in the most striking and forcible light the vast superiority of the Caucasian race in every thing but numbers—

their superiority especially in science, literature, and the arts, power and government; and in every thing else subservient to the comforts of peace, the operations of war, and the elegance and elevation of condition and standing.

The Caucasians are in all respects the masters of the world, though they do not we believe constitute a fifth part of its inhabitants, nor cover perhaps more than one-eighth or tenth part of its surface. It is curious, as well as instructive, in a special manner, to compare the diminutive size of Great Britain, with the measureless dimensions of the nations and territories she has conquered and sways. She occupies on the map we have referred to but little more than a mere *speck* of space, which those who know not its position have difficulty in finding; while her fleets cover every sea and ocean, her arms are almost uniformly and every where triumphant, and her power is felt in every corner of the peopled globe. Nor can even the inferior animals in the north, the tropics, or the south, and whether they wing the air, cleave the waters, or move on solid ground, escape either by flight, concealment, or resistance, the devices of her artfulness, the snares of her hand, or the unlimited sweep and mightiness of her arm. And what is the source of this power and influence? We reply unhesitatingly the functions of the brain—of the largest, best developed, and best conditioned brain belonging to man. And if this brain be accompanied by bodies of the best size and shape, and the most adroit and vigorous in action, let it not be forgotten that brain and nerves, being the master tissue of the system, have no little concern as well in the production of those excellencies of quality and endowment, in other portions of the body, as in their superintendence, maintenance, and regulation when produced. For that the brain,

when of the highest order and in the best condition, imparts to the other tissues and organs of the body, somewhat of the tone and character of its own distinguished qualities, is as certain as that moisture and sunlight, warmth and atmospherical air, co-operating with each other in a well-adjusted union, contribute to the growth and excellence of vegetables.

In a word, Great Britain is peopled chiefly by Anglo-Saxons, the most highly endowed variety of the Caucasian race. Their brains are superior in size, and more perfect in figure than the brains of any other variety; and, from temperament and exercise, they are in the best condition. In function therefore they are the *most powerful* at least, if not the most *active*. And hence the surpassing strength and grandeur at home, and the influence and sway over the other nations of the earth, of those who possess them. The vast and astonishing productions of art in Great Britain, her boundless resources of comfort and enjoyment in peace, and her unequalled means of defence and annoyance in war, are as literally the growth of the brains of her inhabitants, as her oaks, and elms, and ash-trees are of her soil. We shall only add, that the inhabitants of the United States, being also of the best Caucasian stock, and youthful, elastic, and vigorous, as a nation, and enjoying the influence of other circumstances as favorable to the production and perfection of mental and corporeal excellencies as nature can frame, or imagination conceive — in the midst and under the immediate agency of such advantages, the people of the United States promise to be even more than the Britons of future ages.

Having finished his history and geography of the other races of men, our author commences his exposition of the American race. And in this enterprise lie, as was designed to be the case, the chief interest and value of his book.

In the beginning of this exposition he very properly notices a phenomenon which, if not peculiar to the American race, is more strongly marked in them, than in any other people. It is the striking similarity, both physical and moral, very especially in complexion, countenance, and hair, which attaches to them *as a whole.* True; they have their varieties; tribes and communities of them permanently differing in sundry respects from each other. But the differences are not so prominent as those which characterize the varieties of other races. They are much less striking, for example, than the differences which exist betwen real Negroes, Caffres, Hottentots, and Boschesemen—between Arabs, Persians, Hindoos, and Circassians—or even between Germans, Italians and Irish.

When a nation composed of the same people is of great extent from north to south, as is the case with China and Hindostan, Arabia and the United States, the inhabitants of the two extremes differ very percepibly from each other in complexion and figure. The natives of the North are comparatively fair and ruddy, full in flesh, broad in frame, and bulky in proportion to their height. Of the natives of the South, the reverse is true. They are darker in complexion, rather taller, slenderer in frame, and less muscular and weighty in person. This truth is illustrated and confirmed by the appearance of the House of Representatives of the Congress of the United States. When the House is full, a practised eye can readily discriminate, by their complexion and figure, between the members from the northern, middle, and southern States.

Among the aborigines of our country, this phenomenon, so uniform elsewhere, does not present itself—at least not so strikingly or to the same extent. Of the American continent the extent from north to south is considerably greater, than

that of the three continents of the Old World—the southern extreme of the New World being many degrees to the south of the Cape of Good Hope. To this amount of latitude add the influence of its mountains and high table-land, broad plains and prairies, and deep and extensive vallies, and the New World possesses necessarily a greater diversity of climate than the Old. From this unequalled diversity of climate and situation at least, if not also of other physical causes, we might well feel authorized to expect a correspondingly greater diversity of complexion and countenance among its aboriginal inhabitants. But the reverse of this is true. The complexional diversity is greatly inferior. From the confines of Labrador to the heights of Cape Horne, and from the Atlantic to the Pacific ocean, the complexion of the Indian is nearly the same. So is the general physiognomy, with the whole physical appearance and character; and so in a high degree are the moral qualities. Neither latitude nor elevation of dwelling; the freedom and purity of mountain air; the fogs and stagnant atmosphere of vallies; the deep shades of primeval forests; nor the unmitigated and unaverted blaze of sunbeams descending on prairies, produce on the aspect of the roving and houseless native, any very strongly marked, or permanent effect. In the north and south, as well as in the torrid belt of the Equator, and on the mountain, the hill, and the plain, the deep valley, and the interminable prairie, his complexion, figure, and features remain nearly the same. Or if any material difference exist, it is found only among the natives of Mexico and Peru. More singular still. So little influence has latitude and temperature on the complexion of the American Indian, that it is, in many instances, darker in tribes inhabiting cold and temperate regions, and residing on cool and breezy mountains, than it is in the inhabitants of the

ill-ventilated and sultry vallies at their feet, and of the still more burning regions of the Torrid Zone. The well known fact, that amidst the scorching heats of equatorial America, there are found neither real Negroes, nor any thing resembling them, while that race abound in the much milder climates of Oceanica, and elsewhere without the Tropics—that fact alone affords ample and conclusive proof, that *mere temperature*, whether high or low, and whether it be accompanied by moisture or dryness, takes no part in the production of the Ethiopian complexion or hair, features or figure. Indeed the entire history of the aborigines of America, is a sound and overwhelming body of evidence in refutation of the *temperature and climate hypothesis*, which is but the ricketty offspring of ignorance and prejudice; and the nurseling of error, superstition and obstinacy.

Notwithstanding however the similitude, in complexion, of the different varieties and tribes of the American race, the differences in the size and configuration of their heads is sufficiently striking. And in the judicious and accurate exposition of that topic, consists the highest excellence of the work we are examining. Of the differences in the form, though most of them are natural, yet not a few are the product of art. The latter are effected by pressure applied to the heads of children, from birth, until the skull is sufficiently ossified, to retain the flattened or elongated form it has received—for either form is given, according to the taste of the nation or tribe. Those Indians whose crania are most odiously disfigured by this process, are the Charibs, the Natchez, a variety of the race believed to be extinct, the ancient Peruvians, those whose skulls are extracted from the ancient tumuli of the country, and sundry tribes resident on the Columbia river, and scattered along the shores of the Pacific

ocean. Most of the tribes and nations between the base of the Rocky Mountains and the Atlantic ocean, allow their heads to retain, unmolested, the form that nature gives them. It is worthy of remark, that in whatever degree the shape of the skull may be changed by pressure, its size is but little if at all affected by it. The cavities of the most deformed skulls are found to be as capacious, as the cavities of those allowed to preserve their natural figures.

Nor has it been indisputably ascertained that either intellect or health, strenth or longevity, or any other important attribute of mind or body, is materially injured by the pressure and disfiguration of the brain. Completely to solve this problem, however, additional observation and research are essential—observation and research moreover especially directed to the points in question—a measure which we believe has not yet been pursued. As far as our own *suspicion* may avail, we deem it hardly possible that pressure so severe and long-continued as greatly and permanently to derange the shape of the brain, can be practised with impunity. We can hardly doubt, that most feeble children are destroyed by the process; and that the more robust and vigorous ones only survive it. Those tribes and nations, moreover, who now practise it, are in general less elegantly proportioned in their limbs, less masculine and powerful in their persons, and less expert and formidable in war, than those who decline it, and suffer their heads to take their natural shape. Hence the Indians on the west side of the Rocky Mountains are inferior in strength and bodily activity, less warlike, and less dangerous to hunters, trappers, and traders, than those on the east side of them. The real causes of these differences however are yet to be disclosed. They *may* be the presure and disfiguration of the brain alone; they may embrace that combined

with other agencies—or it is even *possible* that the compression may have no influence in the matter. As relates to the process of giving an artificial shape to the head, we shall only add, that Dr. Morton possesses a model of the machine, by which it is effected; and that he has inserted a description, accompanied by an accurate engraving of it in his book. There exists therefore no longer any doubt of the *reality* of the process; whereas, with not a few persons, such doubt, until recently, *did* exist. We speak from *experience;* because, by ourselves, the point has been seriously questioned. And should we even be told that it has been pronounced by us "a mistake"—"a fiction"—and "a traveller's tale"—we should be compelled perhaps, in honesty, to plead "guilty" to the charge. It is worthy of remark, that the altered form of the head is not *hereditary*, but terminates with the individual, and is, in every case, an artificial production. Every infant, therefore, in tribes where the disfiguration is fashionable, is compelled to submit to the torturing process. Such at least is our author's opinion on the subject. From this, if true, the inference may be safely drawn, that flat-headedness does not become *constitutional;* because every constitutional quality is known to be transmissible from parents to their offspring.

Before entering on the representation and formal exposition of their "Crania," our author offers some interesting remarks on the *Stature* of the American race.

"That race," to use his own language, "presents some remarkable contrasts. The Patagonians" (of which the Araucanians are the most distinguished branch) "are the tallest nation on the American continent. Of five hundred of them seen together by Commodore Byron, the shortest were at least *four inches* taller than his own men. Capt. Wallace took the pains to measure many of them, among whom one was six feet seven, and several six feet five; but the greater part of them were from five feet ten, to six feet. On the other

hand, Humboldt found the Chaymas, and some other tribes of the upper Orinoco to be remarkably short. The Pourys and Coroados of Brazil are diminutive races, while the Albipones of Paraguay are, to a man of gigantic proportions. The Muscogee (Creeks) are strikingly tall and athletic—a full size larger than the Europeans. Many nations also both of North and South America are remarkable for the perfect symmetry of their persons." In these, and other facts, as the writer very justly observes, " there is ample evidence to disprove the hypothesis of some closet naturalists, that the physical man of the New World is of defective and degenerate organization."

In farther testimony of this latter truth, it might be added, that, be the cause what it may, the Anglo-Saxon stock of the Caucasian race acquire in America (especially in the United States) a loftier stature than they possess in Great Britain. Hence the American sons of English and Irishmen are usually taller than their sires; and the military step is ordered to be a little longer in the former than in the latter country. Give to the Aborigines of the New World, then, a nervous system in perfect equality, as regards excellence in size, form, temperament, and condition, with the other portions of their organization, and they will rival at least, if they do not surpass the leading variety of the Caucasian race. But in brain, by which alone elevated and efficient standing and character can be attained and preserved, they are deficient. And hence their inferiority. But we must proceed in our analysis.

Those elements of Dr. Morton's labours, from which can be formed the most just and accurate view of the drift and usefulness of the work, are his numerous delineations and admeasurements of skulls. In his delineations he represents the differences of those skulls *in form*, and in his admeasurements their difference *in size*, with a correctness and exactitude neither equalled nor even aimed at, as far as our information reaches, by any other writer. Of the interest and value of

his delineations no satisfactory knowledge can be conveyed by us to the reader, except by a lithograph or an engraved presentation of his plates, which cannot, of course, be given in this article. That information can be acquired only by an examination of his book. From a brief account however of the details of his admeasurements, some conception can be formed of their utility and importance. And that account shall be offered in the writer's own words.

"*Anatomical Measurements.*

"These measurements are derived from one hundred and forty-seven skulls of American Indians, of forty different nations and tribes; and the crania are all of adult persons, and unaltered by art. * * * It is necessary to premise the manner in which the measurements have been taken.

"The *longitudinal diameter*" (of the skull) "is measured from the most prominent part of the os frontis, between the superciliary ridges, to the extreme end of the occiput.

"The *parietal diameter* is measured between the most distant points of the parietal bones, which are, for the most part, the protuberances of these bones.

"The *frontal diameter* is taken between the anterior inferior angles of the parietal bones.

"The *vertical diameter* is measured from the fossa between the condyles of the occipital bones to the top of the skull.

"The *inter-mastoid arch* is measured, with a graduated tape, from the point of one mastoid process to the other, over the external table of the skull.

"The *inter-mastoid line* is the distance, in a straight line, between the points of the mastoid processes.

"The *occipito-frontal arch* is measured by a tape over the surface of the cranium, from the posterior margin of the foramen magnum, to the suture which connects the os frontis with the bones of the nose.

"The *horizontal periphery* is measured by passing a tape around the cranium, so as to touch the os frontis immediately above the superciliary ridges, and the most prominent part of the occipital bone.

"The *length of the head and face* is measured from the

margin of the upper jaw, to the most distant point of the occiput.

"The *zygomatic diameter* is the distance, in a right line, between the most prominent points of the zygoma.

"The *facial angle* is ascertained by an instrument of ingenious construction," &c.

The author's entire description of this instrument it would be useless to insert; because, unless it were accompanied by an engraving, it could not be understood. It must therefore give place to intelligible matter.

From this account of Dr. Morton's measurements, the osteologist will perceive their fitness to give the dimensions of the cranium to be sufficiently perfect for the purposes aimed at. As appears to us, they are wanting in nothing. And the execution of them we believe to have been equally unexceptionable. When to these again is added the measurement of the internal capacity of the skull, both as *a whole*, and as divided into its several regions, in the character of sub-cavities or chambers, every thing is done, as respects the ascertainment of dimension and figure, that can be desired or devised. The whole moreover is well calculated to supply the mental philosopher with the data necessary to enable him to calculate the amount, both proportional and abstract, of intellect, morals, and animality, and therefore of general character, belonging either to individual man, or to races of men, and their subordinate divisions. The real results and usefulness of the writer's measurements can be learnt and appreciated only from specifications of them. Some of them are as follows:

"PLATE V.—ANCIENT PERUVIAN.

"*Measurements.*

"Longitudinal diameter,	6.7 inches.
Parietal diameter,	4.5 "
Frontal diameter,	4.1 "
Vertical diameter,	4.1 "
Inter-mastoid arch,	11.5 "
Inter-mastoid line,	3.6 "
Occipito-frontal arch,	14.2 "
Horizontal periphery,	18 "
Extreme length of head and face,	8.8 "
Internal capacity,	65.5 cubic inches.
Capacity of anterior chamber,	19.75 " "
Capacity of the posterior chamber,	45.75 " "
Capacity of the coronal region,	12.75 " "
Facial angle,	61 degrees."

This cranium, though small, may be received as a fair specimen of the average size of the ancient Peruvian head. Compared to the animal portion of the brain, the intellectual and moral portions are small. It is believed however that the shape of the skull is not natural, but has been altered by pressure.

"THE INCA PERUVIANS.

"PLATE IX.—PERUVIAN FROM THE TEMPLE OF THE SUN.

"A strikingly characteristic Peruvian head, for which I am indebted to Dr. Ruschemberger. As is common in this series of skulls, the parietal and longitudinal diameters are nearly the same.

"*Measurements.*

"Longitudinal diameter, - -	6.1 inches.
Parietal diameter, - - -	6. "
Frontal diameter, - - -	4.7 "
Vertical diameter, - - -	5.5 "
Inter-mastoid arch, - - -	16. "
Inter-mastoid line, - - -	4.5 "
Occipito-frontal arch, - - -	14.1 "
Horizontal periphery, - - -	19.5 "
Internal capacity, - - -	83 cubic inches.
Capacity of the anterior chamber,	33.5 " "
Capacity of the posterior chamber,	49.5 " "
Capacity of the coronal region, -	15.75 " "
Facial angle, - - - -	81 degrees."

The reader will perceive that this Inca or modern Peruvian skull is much larger and better proportioned than the preceding ancient one. It is indicative therefore of having belonged to a superior stock of men—a stock well calculated to prove victors and conquerors, in warfare with the others. And such we doubt not they did prove. They invaded the ancient Peruvians, and banished, enslaved, or exterminated them—most probably the latter. Such, we feel persuaded, is always and necessarily the case, as regards the *permanent* conquest and overthrow of nations. The conquerors have the larger and better proportioned brains.

The reverse of this we apprehend is never true. In no instance does a people, with smaller and worse developed brains, achieve the *permanent* conquest of a people endowed with larger and better ones. True; the Moors, an inferior caste of the Caucasian race, conquered a large portion of Spain, and held possession of it for centuries, though peopled by Caucasians of a higher order. But they were ultimately conquered in turn, by their superiors in cerebral endowment, and banished from the country. Nor is it at all probable, that any

event, in the revolutions of time, will ever recall them to Granada and the Alhambra.

" PLATE XVII.—MEXICAN.

" *Measurements.*

" Longitudinal diameter,	6.8	inches.
Parietal diameter,	5.5	"
Frontal diameter,	4.6	"
Vertical diameter,	6.	"
Inter-mastoid arch,	15.6	"
Inter-mastoid line,	4.4	"
Occipito-frontal arch,	14.6	"
Horizontal periphery,	19.9	"
Internal capacity,	89.5	"
Capacity of anterior chamber,	33.5	"
Capacity of posterior chamber,	56.	cubic inches.
Capacity of coronal region,	19.5	" "
Facial angle,	80.	degrees."

This head, superior to the Peruvian, is believed to be also above the *average* of the Mexican head.

" PLATE XXIII—SEMINOLE.

" *Measurements.*

" Longitudinal diameter,	7.1	inches.
Parietal diameter,	5.6	"
Frontal diameter,	4.7	"
Vertical diameter,	5.5	"
Inter-mastoid arch,	15.	"
Inter-mastoid line,	4.1	"
Occipito-frontal arch,	14.8	"
Horizontal periphery,	20.3	"
Internal capacity,	89.	cubic inches.
Capacity of the anterior chamber,	52.	" "

Capacity of the posterior chamber, - 37½ cubic inches.
Capacity of the coronal region, - 19½ " "
Facial angle, - - - - 78 degrees."

This, being probably about an average standard of the national head is indicative of no common capacity, and shows the Seminoles to be a well endowed variety of the American race. No wonder that, in a country like Florida, abounding in countless and impenetrable places of defence, concealment and annoyance, the conquest of them should be difficult. In the capacities of the anterior and posterior chambers we suspect some mistake.

Without giving their measurements, we shall merely mention that the skulls of the Creeks and Cherokees are of the same order with those of the Seminoles. And their history testifies that those two nations also are warlike and formidable. And the heads of the Chippeways, another nation similar in character, are fully equal, if not superior. So are the heads of the Miamis and Potowatomies—nations that have been obstinate and destructive in war. Of the "five nations" the same is true. Their brains as well as the history of their wars, show them to possess a high station in the American race.

The Osage alone we believe excepted, the Indians west of the Mississippi and east of the Rocky Mountains, are of an inferior order. This appears from the following measurements, which may be regarded as giving about the average (or rather a little more) of the skulls of those nations. Some of them however are fearfully ferocious and sanguinary.

"PLATE XL.—BLACKFOOT.

"*Measurements.*

"Longitudinal diameter,	7.1	inches.
Parietal diameter,	5.4	"
Frontal diameter,	4.3	"
Vertical diameter,	5.1	"
Inter-mastoid arch,	13.8	"
Inter-mastoid line,	4.3	"
Occipito-frontal arch,	14.	"
Horizontal periphery,	19.9	"
Internal capacity,	77	cubic inches.
Capacity of the anterior chamber,	33½	" "
Capacity of the posterior chamber,	44½	" "
Capacity of the coronal region,	18.2	" "
Facial angle,	78	degrees."

"THE FLAT-HEAD TRIBES OF THE COLUMBIA RIVER."

In one respect these Indians may be pronounced an *anomaly;* yet the singular problem they present is susceptible we think of a rational solution. Though their brains are of fair and respectable size, they are, in their qualities and efficiency, a very inferior branch of the American Race. Of all the higher qualities of that Race they appear to be destitute. "They are commonly," says our author, on the authority of Lewis and Clark, "of diminutive stature, badly shaped, and their appearance by no means prepossessing. They have broad, thick, flat feet, thick ancles, and crooked legs." * * * * "The legs of the females particularly are ill shaped and swollen." This unsightly condition of the legs and ancles is attributed by some (though we think erroneously) to "tight bandages of beads and strings, worn round the ancles by the women, which prevent the circulation of

the blood," and thus produce the preternatural bulk and clumsiness of the limbs. This cannot be received as correct physiology. The blood nourishes and vitalizes the organs which it visits. Let its circulation in them be "prevented," and they will become *smaller* instead of larger, for want of nourishment; or disease will invade them, and run into ulceration, if not into gangrene. By the well known action of the bandage, when tight, this is conclusively proved. To some other cause therefore must this thickness and shapeless clumsiness of the limbs be ascribed.

It is hardly we think to be doubted, that the general inferiority of the "Flat-head" Indians is attributable to the injury inflicted by compression on the brain. Were that compression made on the stomach, heart or lungs, no one will doubt that serious mischief would be the certain issue. Hence the well-known disasters of the practice of corsetting, in the production of dyspepsia, pulmonary consumption, disease of the heart, and other grievous and often fatal affections.

But the brain is an organ equal at least in standing and importance to any of the thoracic or abdominal viscera. We have pronounced it in many respects superior, and still maintain the same belief. Through the medium of the spinal cord and nerves, its influence is transmitted with great and essential effect, to every portion, we might say, directly or indirectly, to every fibre of the system. That it therefore can be compressed and distorted, if not literally *dislocated*, with greater impunity than other organs in no respect its superior, but decidedly the reverse, is exceedingly improbable—not to employ a stronger term, and say *impossible*. The "Flat-heads" are palpably of the same race with the great body of the North American Indians east of the Rocky Mountains. They are also fed as plentifully, clothed as well,

and lodged as comfortably, and occupy a climate as pleasant and salubrious. Still are they comparatively of a degenerate caste. For their personal inferiority then to the other tribes of their family, no adequate cause presents itself *from without*. Yet some general and powerful cause of inferiority in them exists. That that cause is *internal* therefore, there is no ground to deny, and but little, in our estimation, to doubt. And we perceive nothing more likely to produce the mischief, than the violence done indirectly to the whole system, by the compression of the brain. And that no deterioration of intellect results from such compression, it requires more credulity than we possess to believe, or deem possible. In our opinion, a more incredible position can hardly be put or even imagined. The process is but little less in character than an infantile *chronic apoplexy*—or a fracture and long-continued depression of the skull. The marvel is, not that such violence done to the brain should seriously derange the functions of that viscus; but that it does not produce fatuity or death. The following are the dimensions of the cranium of a "Flat-head" of the largest size.

"PLATE XLV.—KILLEMOOK.

"*Measurements.*

"Longitudinal diameter,	6.9	inches.
Parietal diameter,	6.3	"
Frontal diameter,	4.9	"
Vertical diameter,	4.8	"
Inter-mastoid arch,	15.7	"
Inter-mastoid line,	4	"
Occipito-frontal arch,	14	"
Horizontal periphery,	21	"
Extreme length of the head and face,	8.5	"
Internal capacity,	92	cubic inches.
Capacity of the anterior chamber,	34	" "

Capacity of the posterior chamber,	58	" "
Capacity of the coronal region, -	19.3	" "
Facial angle, - - - -	73	degrees."

This is the largest but two of all the posterior chambers of the skull, that Dr. Morton has measured. It testifies of course to the inordinate animality in the savage who possessed it. But on these points, full of interest and instruction as they are, we can dwell no longer, but must hasten toward the close of our review.

Having terminated his measurements and calculations, after toiling through a degree of industry, patience, and labor that, without exaggeration, may be pronounced stupendous, Dr. Morton thus expresses himself, in the language of one who is emboldened by a consciousness of having faithfully endeavored to acquit himself of his duty.

" In conclusion, the author is of the opinion that the facts contained in this work tend to sustain the following propositions:

" 1st. That the American Race differs essentially from all others, not excepting the Mongolian; nor do the feeble analogies of language, and the more obvious ones in civil and religious institutions and the arts, denote any thing beyond casual or colonial communication with the Asiatic nations; and even these analogies may perhaps be accounted for, as Humboldt has suggested, in the mere coincidence arising from similar wants and impulses in nations inhabiting similar latitudes.

" 2d. That the American nations, excepting the Polar tribes, are of one Race and one species, but of two great Families, which resemble each other in physical, but differ in intellectual character.

" 3d. That the cranial remains discovered in the mounds, from Peru to Wisconsin, belong to the same race, and probably to the Toltecan family."

Having laid down these propositions, in the form of corollaries deduced from the body of the work, our author offers, on the comparative size of the brains of the five races of men of whom he had treated, the following interesting and important

observations. The facts they embrace are the result of admeasurements; and, as far as they extend, they put at rest the question of the relative magnitude of the Caucasian brain. We feel persuaded that, as soon as they shall be made known to him, even Tiedemann himself and his stubborn adherents, hostile as they are to the doctrines of phrenology, will cease to contend that the brain of the African is equal in size to that of the Caucasian. With equal truth may they contend for identity in the colour of the skin, the figure of the nose, and the entire character of the lips and hair of the two Races. Never were the blindness and deceptiveness of professional prejudice more doggedly manifested. The following are the observations to which we allude.

NOTE.—*On the Internal capacity of the Cranium in the different Races of men.*—Having subjected the skulls in my possession, and such also as I could obtain from my friends, to the internal capacity measurement already described, I have obtained the following results. The mean of the American Race (omitting a fraction) is repeated here merely to complete the table. The skulls of idiots and of persons under age were of course rejected.

"Races.	No of Skulls.	Mean internal capacity in cubic inches.	Largest in the series.	Smallest in do.
Caucasian,	52	87	109	75
Mongolian,	10	83	93	69
Malay,	18	81	89	64
American,	147	80	100	60
Ethiopian,	29	78	94	65

"1. The Caucasians were, with a single exception, derived from the lowest and least educated class of society. It is proper however to mention that but three Hindoos are admitted in the whole number, because the skulls of these people are probably smaller than those of any other existing nation. For example seventeen Hindoo heads give a mean of but *seventy-five* cubic inches."

After a few farther remarks on the Caucasians, Mongolians, Malays, and Ethiopians, which it is not important for us to quote, Dr. Morton subjoins:

"5. Respecting the American Race, I have nothing to add, excepting the striking fact, that, of all the American nations the Peruvians had the smallest heads, while those of the Mexicans were something larger, and those of the barbarous tribes the largest of all, viz:

"Toltecan nations.	Peruvians collectively,	76 cubic inches.
	Mexicans collectively,	79 "
Barbarous tribes as per table,		82 "

"An interesting question remains to be solved, viz: the relative proportion of brain in the anterior and posterior chambers of the skull in the different races; an inquiry for which I have hitherto possessed neither sufficient leisure, nor adequate materials."

As connected with this question, and tending toward a solution of it, the following statement is worthy of notice.

On comparing with each other an American and a Caucasian brain, very nearly equal in size, and each being in form about an average of its race, the size of the three lobes was materially different.

In the Caucasian brain, the front lobe, which is the seat of intellect, was much larger than in the American, and its convolutions considerably bolder and more prominent.

In the American brain, the middle lobe, the seat of the animal and the semi-animal propensities, was in an equal degree larger than in the Caucasian, and its convolutions deeper.

And in the Caucasian brain, the posterior lobe, the seat of the domestic and social affections, was much larger, and more strongly marked in its convolutions than in the American.

These facts are in beautiful correspondence with the well-known differences in the characters of the two races. The Caucasian is superior, according to the indication of his brain, in the intellectual, social, and domestic faculties, and the American in the animal and semi-animal. C. C.

ART. VI.—*Elements of Pathological Anatomy, illustrated by numerous engravings.* "In Morbis, sive acutis, sive chronicis, viget occultum, per humanas speculationes incomprehensible." Baglivi. By SAMUEL D. GROSS, M.D. Late professor of General Anatomy, Physiology, and Pathological Anatomy, in the Medical Department of the Cincinnati College. Vol. II, 8vo., Boston, 1839. Marsh, Capen, Lyon & Webb and James B. Dow.

MANY of our brethren must well remember the time, when the only work on Morbid Anatomy within their reach, was the little volume of 250 pages, from the pen of Dr. Matthew Baillie of London, re-printed in Albany in 1795. It was altogether *special.* Since that date, such has been the progress of this new department, that the *general* has been added to the special—systems have been formed, and a new branch of science created. Previously, however, to the re-publication in this country, of Andral's celebrated "Treatise on Pathological Anatomy," eight years ago, the American student had but meagre opportunities for the prosecution of this most interesting and useful study. The advancement which has been made since that work appeared, may be inferred from the fact, that several medical schools have been enriched with professorships of Morbid Anatomy, and, still more, from the fact now before us, that a physician of our own country—a practitioner of the west—has brought out a well-digested work of equal extent, and greater simplicity than Andral's, which, we learn, is every where well received by the profession.

The eminent French pathologist attempted to present the facts of this science, by a method that would disclose the origin of the morbid appearances which he described. Thus he formed the great classes—lesions of circulation—of nutrition, of secretion, of innervation, and of the blood. It is certainly

advantageous to the student to contemplate them by the lights of this system, but we cannot admit that it is without difficulties. Thus it rarely, if ever, happens, that one of the great functions can be disordered, and the others remain unaffected; and in the majority of cases the lesion of structure is manifestly the result of irregularity in more than one of the functions. To select a simple case, the hypertrophy of an organ, although, immediately, the effect of an excessive energy of the nutritive function, is generally attended equally with an excess in its circulation. But to choose a stronger and more complicated example—in induration what do we observe? A chronic inflammation, (lesion of the *circulation*,) sustained no doubt by a lesion of the *innervation*, a lesion of the *blood*, indicated by its siziness, and a lesion of *secretion*, if not indeed of *nutrition*. To refer an indurated tissue to any one of these heads is then, evidently, an arbitrary decision.

Perceiving this difficulty, professor Carswell of London, one of the ablest pathological anatomists of the age, in his splendid and expensive "Illustrations of the Elementary Forms of Disease," (he should have said, of *deranged structure*,) determined to class the morbid appearances according to their affinities. Thus, to cite a single example, he brings together all the cases of *softening*, however diverse the lesions of function generating them; and then proceeds to enumerate those lesions. This is the plan adopted by professor Gross, and we think it decidedly preferable to that of Andral.

Nevertheless, whatever method of classification the pathological anatomist may adopt, he must always commence with inflammation; for it is undeniable, that of all the modes of morbid action, this one is most prolific in those results, which are the immediate objects of his study.

To this great truth our author is quite alive. Indeed, he

seems to favor the opinion, that *all* derangements of structure depend directly or indirectly on this kind of morbid action—more or less intense, and modified in its phenomena and effects, by the tissues in which it occurs, the nature of the remote cause, and the temperament of the patient. Thus he assigns the same proximate cause—inflammation, for the false membranes of the pleura, the tubercles of the lungs, the serum in hydropericardium, and scirrhous tumours—it being understood, however, that some of these inflammations are of a common kind—others specific. At the same time, he is a decided advocate for the doctrine, which teaches the local origin of *all* diseases, and the sympathetic origin of all constitutional affections. In this generalization, which reduces every morbid state to inflammation and constitutional disturbance, as its effect, there is certainly an attractive simplicity; but we are not yet fully prepared for its adoption. Used in this comprehensive sense, the word *inflammation* becomes nearly synonymous with the *morbid action* of our celebrated countryman Dr. Rush; which, in turn, is but an equivalent for disease—and these different forms of speech might indeed be indiscriminately employed.

A mode of morbid action is characterized, first, by the phenomena which it displays during its existence, second, by its effects. When both have been adequately observed, and are found to be constant, we admit, that occurrence of this mode in any particular case, may be established, either by the symptoms, or the morbid appearances, found after they have passed away. Whenever the well known phenomena of inflammation are present—or the appearances on examining a morbid structure are such as are known, at all times, to have been preceded by those phenomena, we must grant of course that the disease *is* inflammation. But we are not bound to grant,

when neither the symptoms nor the morbid products *known* to result from inflammation show themselves, that the disease was inflammatory. Thus, if we observe swelling, redness, pain and heat, or a majority of these conditions, in a part, we say that it is inflamed; and if we find deposits of pus, or of coagulable lymph, in the form of false membranes, in tissues which have ceased to be the seats of morbid action, we admit their inflammatory origin, because observation has taught us, that inflammation and it *only* produces them. When, however, we find serum, scirrhus or tubercle, in parts which have not emitted the symptoms of inflammation, and unassociated with false membranes or purulent secretion, it is gratuitous to affirm, that they are the offspring of inflammation. The existence of any one of them in any particular case, cannot, therefore, be cited as evidence of previous inflammation, until it is shown by testimony, that inflammation has in other cases produced it.

We grant that these, and other morbid products of a like kind, *may* be the offspring of inflammation, and it is due to the class of pathologists of which our author is one of the ablest, to admit, that they are not without facts of a weighty character to sustain their conclusion.

First.—The vast number of cases in which inflammation is the undoubted cause of morbid structure, would seem on the principles of analogy, to warrant the conclusion, that *all* morbid structures are its consequence. This however is but presumptive evidence.

Second.—Many inflammations it must be confessed, from the nature of the tissues in which they are seated, and from their mildness, give little pain and awaken but few constitutional sympathies; they may, therefore, exist to the extent of producing deranged structure, without manifesting them-

selves by the usual signs; and it cannot be said, that certain serous effusions and non-analogous deposits, are not of this kind. Thus tubercle may be secreted under such an inflammatory action. But here again is nothing more than probability.

Third.—It is affirmed, that many inflammatory congestions disappear, when the patient is *in articulo mortis*, or immediately after death. When we recollect, however, that the difficulty of washing or expressing the blood, from an inflamed tissue, is given as an evidence of the existence of previous inflammation, we cannot grant, that the number of cases of *resolution* at the close of life is as great as some pathologists believe. We *conjecture*, moreover, that it is in cases of short duration rather than chronic, that the inflamed capillaries thus unburthen themselves.

Fourth.—Almost all deranged structures, manifestly depend on deposits from the blood. Now inflammation, in all its stages, is known to favor effusion, and it may, therefore, be presumed to occasion all that we find. It is, however, an unquestionable fact, that we *may* have copious and altered secretion without inflammation. Blood is extravasated into the cutaneous or subcutaneous parts in scorbutus—the kidneys, and intestinal mucous membrane, secrete copiously an altered fluid under certain mental emotions, and the skin pours out freely in the very hour of death. There is no inflammation in any of these cases.

Fifth.—It may be, that certain heterologous matters, such as tubercle, melanosis and scirrhus, take the place of the ordinary lymphatic deposits afforded by common inflammation, which latter do not therefore appear. This must be granted; but the possibility of such an operation cannot be admitted as evidence of its actual occurrence.

Sixth.—An argument on which our author lays great stress is, that the deposit of lymph is one of the most characteristic effects of inflammation, and that a part at least of the heterologous structures, when analysed, are found to be nearly of the same composition. Some of them, however, are highly albuminous. Moreover, all deposits must be from the blood, and all which solidify must be composed in a great degree of the coagulating or, at least, the coagulable parts of that fluid. The source and material, then, of the analogous and the non-analogous deposits, must be the same; but it by no means follows, that the *mode* of action which produced the extravasation is the same, and to it our attention is now directed.

Seventh.—The heterologous deposits possess in themselves the power of generating blood and vessels to circulate it, which inosculate with those of the tissue into which the deposit has been made; a phenomenon identical with what we see in false membranes. This fact is entitled to grave consideration; but we cannot admit its conclusiveness; for, in the first place, it has not yet been *established*, that all of these productions possess this self-organizing power; and secondly, if they do, it would not prove that the *action* which extravasated the altered lymph that generally enters into their composition, was inflammatory. We do not know, but that other modes of morbid action may throw out lymph capable of generating blood and vessels. When this is shown to be impracticable the controversy will be at an end.

Lastly.—All the non-analogous structures, are sooner or later associated with inflammation in the surrounding tissues, and most of them present it in their own substance. But this association, established long after they were deposited, can throw no light on the mode of morbid action which occasioned their deposit.

Our limits do not permit us to extend the inquiry into this subject, which, at last, is of more interest in a pathological, than a therapeutic view; for if most of the cases in dispute are of such a *specific* inflammatory nature, as to afford results so different from those of common inflammation, we cannot expect to cure them by simple antiphlogistics; and, indeed, experience has taught us, that the deposit of tubercle, scirrhus, encephaloid and melanosis, cannot be arrested by the means which subdue ordinary inflammation. It is, then, to their peculiar or specific, not their inflammatory or non-inflammatory character, that we should turn our attention.

Having indicated one of the great principles which pervade the first part of Professor Gross' book, we shall with greater conciseness refer to another. Although adopting the division of morbid structures into analogous and heterologous, he distinctly intimates that there is not much foundation in nature for this division. This in fact is but a corollary from the other proposition, to-wit, their derivation from a common source, through the same instrumentality, inflammation. But apart from the last of these considerations, we do not perceive much propriety in this distinction.

All of them are derived from the blood, by morbid secretion; they are all disposed to become vascular, and all bear a resemblance to the normal tissues, while none of them is perhaps identical with any one of those tissues, except the cellular. It is true, that some of the abnormal approach much nearer to their natural prototypes, than others; but there is not one, which has not its analogue in the healthy structure. Thus, to use the words of our author, encephaloid bears a striking resemblance to the substance of the brain; melanosis to the coloring matter of the skin (in the negro;) scirrhus to the dermoid texture; and tubercle, at least in some of its

forms, to fibro-cartilage. We might extend these comparisons by a reference to the terms mammary, pancreatic, lardaceous, &c. employed by surgeons, to designate varieties of carcinoma, in its earlier stages, when the resemblances of structure are quite as great, as another variety bears to the brain, from which it has received the name encephaloid. Still further, softened tubercle resembles pus, classed it is true with the heterologous products, but presenting so many points of resemblance to mucus, that for ages the profession have exercised themselves on the means of distinguishing, in certain cases, one from the other. The calcareous masses found in the lungs, which in the opinion of Andral have taken the place of tubercles, resemble bone; and some urinary calculi have the same resemblance, while others are but the solidification of matters produced from the kidneys in their healthy condition, and some times found in the circulation.

Those products of morbid secretion, which bear the least resemblance to the tissues into which they are made, are most pernicious, and, at the same time, the most perishable, and vice versa. Thus tubercle, encephaloid and scirrhus, may be contrasted with melanosis, osseous concretions, many encysted tumours, and the false membranes, most of which injure by their mechanical action only; and are not liable to the decomposition, which, sooner or later, awaits those deposits which in their molecular constitution are further removed from the normal tissues. It is during this decomposition, the necessary result of their imperfect organization and vicious or low vital endowment, that the destruction of the tissues which constitute their matrices or beds, takes place; attended with such constitutional derangements, in both the solids and fluids, as very generally prove fatal. Two questions of deep importance to the practical physician are here suggested. First,

may we hope to discover how to prevent these deposits? Second, shall we ever acquire the means of protecting the organs and constitution against the destructive consequences of their decomposition—cause them, as it were, to slough away, and the original tissue to be replaced, or a substitute for it formed? We may, indeed, add to these another inquiry—will it be possible to keep these deposits from undergoing decomposition, still suffering them to remain, like encysted bullets, "in the flesh?" We shall not attempt to answer either of these questions.

Having indulged ourselves in these preliminary observations, on some of the first principles of pathological anatomy, we shall proceed to give a more detailed account of the work before us.

In the first chapter, Professor Gross, has presented a general view of the phenomena, causes and nature of inflammation; in which we find much to commend and but little to condemn. From page 23 we make the following extract:

"It has been already intimated, that diseases are functional or organic. As it is of the latter class that we shall more particularly treat in the following pages, it will be proper that we should speak of them somewhat at length. Before proceeding further, however, it behoves me to explain what I comprehend by the term organic. By pathological anatomists, the word is generally employed to denote some permanent change in the textures of an organ; but, in the sense that I would use it, I would not only include under it all such lesions, but also every temporary alteration which the tissues experience when in a state of disease. The term organic will then have a wider latitude; and, as expressing the same thing, we shall often have occasion to use the word structure. If this accetaption be adopted, it may perhaps be doubted whether, under any circumstances, there can, strictly speaking, be a functional disease, or, in other terms, a mere aberration of the physiological state of a part, without some change in its anatomical elements. The question, at all events is not settled.

"Bearing in mind the above definition, it may be assumed, as a general proposition, liable to few exceptions, that all organic diseases, whatever be their seat or extent, are the result of inflamma-

tory action, either of an acute or of a chronic kind. To many, this proposition may be startling; nevertheless, if it be carefully examined, it will be found, I doubt not, to be grounded on fact. The truth of this remark will appear more evident as we proceed."

The first of these paragraphs may present a great truth, but the evidences of it we confesss are not always conspicuous, though, from analogy, we feel almost warranted in the conclusion. The minuteness of the parts in which many morbid actions are seated, must forever render an observation on their appearance, in health or disease, extremely difficult; but we can scarcely conceive it possible, while all the anatomical elements—solid and fluid—continue precisely the same, in their relative quantities and positions, that an altered action can be established in it—we mean an action, that should vary from the natural except in degree. Still, the causes of disease are not necessarily mechanical, but agents which exert their influence on the contractility and sensibility of the tissues, and change their mode of action through the medium of those attributes or properties. Now we may suppose, that simultaneously with that change of action, there is a corresponding alteration of structure—not, it is true, of a *permanent* kind, for it may endure no longer than the morbid action itself, and may consist in nothing more than an increased or diminished quantity of blood in the part—a variation in the relative proportion of arterial and venous blood—and an augmentation or diminution of the interstitial secretion. In addition to these suppositions, we may, however, assume that the molecules of the tissues themselves undergo some change in their relative positions, for the *progress* of diseased action invariably presents us with softening, induration or transformation.

But while we concur with our learned author, in the belief,

that altered actions are probably always accompanied by altered organization (embracing in the latter term both the solids and fluids in due proportions,) we are not prepared to assent to his deduction from this proposition, that all diseases are necessarily inflammations; for we can readily conceive that many other modes of altered action and structure, than the inflammatory, *may* exist, and so change the nature of the products of nutrition and secretion, as to present pathological products of a determinate and permanent character. But having already discussed this subject to some extent we shall not enlarge upon it here.

In connexion with these remarks, we give another extract:

"The second proposition that may be stated is, that every inflammation, irritation, or morbid action, is originally of a local nature; that is to say, it makes its impression in the first instance always upon some particular part, texture, or organ. After this inflammation has continued for a longer or shorter period, it often happens that it extends to and implicates other structures. If the mucous membrane of the stomach, for instance, be fretted, the morbid action accruing from this cause will be confined at first to that lining; or, in more comprehensive terms, the disease will be strictly local in its character: by degrees, however, as the disorder progresses, the adjacent parts, such as the submucous cellular tissue, become affected; and, spreading still further, it next invades the muscular fibres of the organ, and, finally, the peritoneal covering. It is in this manner that most affections, which are originally local, extend their sphere of action, so as to become general, whether they be considered simply in reference to one organ, to several, or to a great number of them."

We should prefer the word partial to "local" in the beginning of this extract. The noxious agent which exerts its influence on the cutaneous surface of the body, or the internal parietes of the arterial system, cannot be said to act locally, though its action is but upon a *part* of the body. In his explanation of the extension of morbid actions through the system, our ingenious author does not display his usual perspicuity. He would seem to deduce the affection of *distant* or-

gans, from the same principle or mode of diffusion, by which a morbid action is transmitted from tissue to tissue in one organ. If this were the case, it strikes us, that a distant organ could not be reached, but through morbid action in *all* the intervening parts, as the skin becomes ultimately affected when a suppurative inflammation commencing in the substance of the liver, makes its way to the surface; or a caries becomes the cause of a circumscribed inflammation, progressively set up in all the tissues which lie over that part of the bone which is affected, until the skin is at last involved. These examples of propagation, although regarded by Hunter as sympathies, result, perhaps, from a kind of physical necessity, founded on the immediate anatomical relations of the tissues of the part; and ought not, it strikes us, to be referred to the same principle which causes an inflammation of the liver to excite a pain in the shoulder, or the other great principle, which makes it a fruitful source of morbid sensibility of the nervous system, by the impress on that system of the unexcreted elements of the bile. Our author in other parts of his book gives abundant evidence of a familiar acquaintance with these great principles, and, therefore, perhaps thought a reference to them in this place unnecessary.

"The time of life which seems to be most obnoxious to this disease, (inflammation,) is from the first to the tenth year, nearly one half of the entire mortality occurring during this interval. Affections of the cutaneous, mucous, and lymphatic systems, are particularly rife during this period, and carry off an immense number of children. Scarcely less common is inflammation of the arachnoid membrane. Pleuritis, pneumonitis, cerebritis, and hepatitis, with carditis, phlebitis, and arteritis, are comparatively frequent before the age of manhood; from thence on, however, they are by no means unusual, and prove a fruitful sourceof destruction. Diseases of the genital organs are rarely observed before the age of puberty; anterior to this period, these structures seem, indeed, in a great degree, to lie dormant in the system. Once roused into action, however, they deeply sympathize with the other viscera, and hence the

frequency of organic maladies of the uterus, the ovaries, breasts, and testicles, towards the decline of life. Affections of the urinary bladder are comparatively rare in the young, whilst they are very common in the old."

We commend the first part of this comprehensive paragraph to all our practical readers. The frequency of acute inflammatory affections in infancy and childhood, is much greater than many of us suppose.

The following extracts will be read with interest.

"The disease before us does not occur with equal frequency in all the organs and tissues of the body. There are some parts, in fact, in which it has been doubted, though, as I think, without any foundation in truth, whether this affection ever takes place. Such are the nails, the epidermis and the hairs. These structures are supposed, by general anatomists, to be destitute of vessels, and, therefore, incapable of performing any vital action. This however, is merely a conjecture; the fact remains to be proved, and, for my own part, I feel as certain that these textures are susceptible of inflammation, as that the liver is, the stomach, or any other organ.

"The cellular, mucous, serous, and dermoïd textures are particularly prone to inflammation. In children, this is different. In them, the cutaneous and mucous textures are infinitely more liable to inflammation than the cellular tissue and serous membranes—the frequency of their attack being, as nearly as can be, in the order here stated. It is here that the disease can be studied with the greatest advantage, both as it respects its phenomena and modes of termination, inasmuch as it is usually well marked, intense in degree, and rapid in its progress. The synovial membranes, the fibrous envelopes, the bones, ligaments, and cartilages, with the muscles and their tendons, inflame with difficulty; but when the disease has once fastened upon them, they readily yield to its influence, the sufferings are often excessively severe, and the consequences very serious. The blood-vessels, nerves, and absorbents, are all more or less liable to phlegmasia. The conservative powers of these structures, especially of the former, is remarkable, and is strikingly evinced in cases of gangrene, where, as will be shown hereafter, they frequently retain their vitality amidst the half putrefied mass.

"Of the organs, some are more ready to take on inflammation than others. Those which are most frequently affected, at least in this country, are the lungs, spleen, liver, uterus, and brain. The heart, ovaries, thyroïd body, pancreas, prostate gland, testicles, and kidneys, are comparatively rarely the seat of this disease."

The following are our author's views of the structure of the capillary vessels, in all cases the seats of inflammation:

"The walls of the capillaries, as may be imagined, must be extremely thin, delicate and transparent, otherwise it would be much easier to discern them. Bichat states that they are formed entirely out of the inner arterial and venous membrane, the other tunics being excluded, as he alleges, from their composition. An opinion precisely similar to this is advanced by Beclard. He asserts that the parietes of the capillaries are scarcely to be distinguished from the substance of the organs, in which they are situated, and thence draws the inference that they are rather formed out of this substance than that they possess walls of their own, acknowledging, however, at the same time, that it is not impossible that the internal tunic of these vessels is uninterruptedly continued from the arteries to the veins. Admitting, as we have already done, the utter impossibility of determining the precise point at which the arterial tubes in question terminate, and that at which the venous tubes commence, it would seem that the doctrine of the two French anatomists is entirely too exclusive in its bearings to entitle it to our confidence and regard. It is true, neither dissection nor microscopic observation can afford us much aid in solving the difficulty; for the vessels are altogether too minute to enable us to investigate their structure with any degree of accuracy; still, where these means fail us, we are warranted in going to analogy, and in availihg ourselves of its assistance.

"Taking it for granted that the privilege above alluded to properly belongs to us on the present occasion, let us extend our examination to other tubular structures, and see if we cannot find a more philosophical method of disposing of the question than that resorted to by the French anatomists. Let us take the excretory duct of the liver, and follow it along its ultimate ramification in the organ whose secreted fluids it is intended to carry off from the system. In the early part of its course it consists, plainly enough, of two tunics, which, as they extend into the substance of the viscus, become so excessively attenuated that it is quite impossible not only to separate them from each other, but even to distinguish them from the surrounding textures. Now that the inner membrane is prolonged as far as the very point at which the tube terminates, or rather where it takes its origin, no one can for a moment doubt, for the bile is a highly acrid fluid; and hence nature, in order to guard against suffering, has wisely furnished the canal with a mucous lining. But is it reasonable to presume that, because we can no longer discern the external tunic, it must necessarily be wanting? Is it not more philosophical to suppose that both membranes exist, than to say that one is preserved and the other lost? This conclusion involves nothing that is either absurd or improbable; and, although not founded on actual observation, it is much more in conformity with sound anatomy and physiology than any other that has been framed in relation to the subject. If, now, we apply this mode of reasoning to the capillaries, it will at once be perceived that the theory of

Bichat and Beclard is untenable; and that these vessels, instead of possessing, as they imagined, only one tunic, have precisely the same number as the arteries and veins, between which they are situated. If this idea be adopted, it follows, as a necessary corollary, that the capillaries are nourished and animated, like the rest of the vascular system, by vessels still more minute, and by nerves so excessively delicate as to elude even the most powerful microscope."

Prof. Gross' conclusions as to the structure of the parietes of the capillaries have been confirmed by actual observation. In the 877th page of Muller's Elements of Physiology, received in this country since the preparation of the Professor's work, it is stated that by the aid of a high magnifying power, Dr. Schwann has distinguished delicate and indistinct *transverse* fibres in the parietes of the smallest arteries of the mesentery of the frog, and that even the *capillary* vessels of the same part have similar fibres; "a fact," says Muller, "which decides the question, as to capillaries having distinct parietes." Dr. Baly, the London translator, adds that "these *circular* fibres are arranged as in *arteries*. It is necessary to employ a high magnifying power, and rather a feeble light; but they may be seen in the dead, as well as the living frog." In our reasonings, then, upon the influence of agents and on the functions and morbid states of the capillaries, we must be guided analogically by observations made on visible arteries.

Before dismissing this chapter of our author's work, it will be but justice to him and to our readers, to furnish them with an extended extract, that they may judge for themselves of his manner, and this we shall do without comment:

"The very first step in the process of inflammation is an altered sensibility of the part, produced by some hurtful agent, which the system makes an effort to dislodge. To effect this, the local impression is reflected upon the cerebro-spinal axis, and through this again upon the heart, which being sympathetically incited to increased action, more blood flows to the part concerned than it is accustomed

to receive, at the same time that the capillaries are perceptibly dilated. Those who maintain that the capillaries possess an inherent contractility, by virtue of which they aid in the circulation, will probably feel disposed to deny the agency of the heart in bringing about this preternatural determination of blood; to such I will only say, that if they will carefully study the subject, they will arrive at a different conclusion. That these vessels do contract and dilate, no one will dispute; for the experiments of Hunter, Wilson Philip, Thompson, Hastings, and other writers, have fully decided this point; all that I contend for is, that the capillaries have no vermicular movement, and therefore they are incapable of carrying on the circulation without the direct influence of the heart. In the inceptive stage of inflammation, this sympathetic action of the heart is no doubt so slight as frequently to escape the attention of the observer: as the disease progresses, it assumes a more distinct character, and can always be easily recognized.

"The phenomena above alluded to, namely, the preternatural influx of blood and the dilatation of the capillaries, can be easily detected by exciting irritation in the mesentery of a rabbit, the tail of a tadpole, the fin of a fish, or the web of a frog's foot, parts which are perfectly transparent, and therefore well calculated for the purpose. On viewing these structures with a microscope, in the sound state, numerous channels will be observed filled with blood, the red globules of which roll along in the most regular and beautiful order. If they be now irritated with spirits of wine, hot water, or diluted acid, the little rivulets just referred to will be found to become dilated, from the manner in which the blood is crowded into them by the heart, which in order to remove the local difficulty, is excited into sympathetic action. In a few minutes hundreds of vessels, which were previously invisible, will be seen shooting out in different directions, and connecting themselves with the sides of those that appeared in the first instance. These are not new channels, but old ones appertaining to the second class of capillaries, which are rendered evident by the intromission of red particles, which are either excluded in the healthy state, or pass along them in so slow and gradual a manner as to elude the eye of the beholder. The little bodies which are thus introduced do not circulate, at first, with the same facility as in the other parts of the body; for, as the dilatation of the little rivulets takes place by degrees, they have to force their way, and hence, after having advanced a short distance, they retreat slightly immediately after each pulsation of the heart, rebounding, as it were, upon each other. In this manner they travel on, surmounting every obstacle, until they finally reach the corresponding capillary veins, into which, as they are considerably more capacious, they rush, as into a vortex. Such are the initial steps of inflammation. If the process be now checked by the removal of the exciting cause, the phenomena referred to gradually disappear, and the part recovers its natural tone and condition.

"If, on the other hand, the inflammation be allowed to proceed, another series of changes may be witnessed, surpassing, if possible, in point of interest, those we have just described. The circulation now completely ceases, the blood assumes a dark modena color, and the coats of the vessels are rendered so soft as to be liable to give way on the slightest force. With these alterations the healthy functions of the part are suspended: it is red, hot, painful, and tumid; and its molecular intervals are filled with serosity or coagulating lymph. In this stage of the malady, the capillaries contain thick, viscid, partially clotted blood, which adheres with great tenacity to their inner surface, and opposes an effectual barrier to artificial injection, or to the removal of the fluid by pressure or ablution. In violent cases the blood escapes from the diseased vessels, and, forcing its way along the cellular tissue, forms new channels, through which it afterwards continues to circulate. This interesting phenomenon, which has been frequently noticed by Kaltenbrunner in the inflamed mesentery of the rabbit, is strictly analogous to what occurs in the organization of adventitious membranes,—a subject to which the attention of the reader will bo subsequently directed.

"Inflammation, it will thus be seen, is a gradual process, which is preceded and accompanied by certain stages. Of these, three are recognized by Kaltenbrunner. The first he denominates the stage of incubation; the second, the stage of congestion; the third, the stage of inflammation, properly so called. Each of these is characterized by particular phenomena, the most important of which have been already described, in the order, as nearly as may be, in which they appear. To this arrangement I can see no special objection: it should be recollected, however, that it is altogether artificial, and that the stages which it recognizes are frequently so blended as to render it impossible to distinguish them from one another. Contrary to what might be inferred from analogy, Kaltenbrunner has ascertained the singular fact, that more time is usually required for inflammation to be developed in highly vascular organs, as the lungs and peritonæum, than in parts in which the circulation is more tardy and less perfect, as the liver and kidney. It is worthy of remark, however, that when the disease is once fairly established, it progresses much more rapidly in the former than in the latter of these structures.

"Another striking phenomenon is the distended condition of the larger vessels leading to the inflamed part. When the disease is at its height, the congestion often extends to a considerable distance; the blood is unnaturally dark, thick, and viscid, and artificial injection is difficult, sometimes impracticable. It has been alleged that the larger arteries in the immediate neighborhood of the lesion occasionally pulsate with preternatural force and frequency; but this is an assertion which is unsupported by proof, and which is, moreover, in direct opposition with every principle of physiology. The intensity of the morbid action is generally greatest at the centre of the

inflamed part, from which it is gradually, and, in some instances, suddenly diminished, until it loses itself in the circumjacent textures."

Chapter II treats of the effusions of serum. These are among the earliest and most constant of the effects of inflammation. Indeed, we may presume, that in all cases of inflammation, whatever other matters may at length or ultimately be poured out, serum more or less changed in its constitution, is the first secretion. Being a proximate effect of the vascular turgescence which it no doubt operates to diminish, we may regard its secretion, as one of the modes in wbich the cure by *resolution* is effected. At least many such cases must of necessity be confounded with those in which the inflammation is said to be discussed. When seated in certain parts of the body, this mode of termination is harmless, as the effused fluid may not much derange the functions of the organ, and will be soon absorbed; but in others, as the pericardium and ventricles of the brain, its presence is of serious import.

Under this head professor Gross has sought for aid to his favorite hypothesis, that all morbid secretions are the effect of inflammation. We shall let him speak for himself.

"It has been already hinted that serous effusion is the result of inflammation, usually of a very mild grade. That this is true, as a general rule, very few will attempt to dispute; the exceptions, if there be any, are certainly very rare, and have not hitherto been satisfactorily pointed out. A few facts, clearly and concisely stated, will assist in determining this problem.

"It has been alleged, in the first place, that serum is occasionally effused when there is an obstacle simply in the circulation, without any concomitant inflammatory action. It is a matter of common observation with the physician, that anasarca of the lower extremities often arises from obliteration of the femoral, external iliac, and ascending hollow vein; and the face, neck, and arms are frequently loaded with serum from compression of the vessels whose duty it is to return the blood to the right side of the heart. When the portal vein, or any one of its principal branches, is obstructed, abdominal dropsy, or ascites, follows. Contraction of the right auriculo-ventricular orifice, or disease of the valves of the pulmonary artery,

impeding the passage of the blood, and compelling it to regurgitate into the inferior cava, produces the same result, together with œdema of the legs and feet. These examples will be sufficient for the subject which they are intended to illustrate. Let us now endeavor to ascertain how far they are dependent upon inflammation, or whether they are the result merely of mechanical obstruction? It is frequently extremely difficult to ascertain the condition of the seat of the effusion by anatomical inspection. In ascites how often does it not happen that there is the most copious accumulation of water, caused obviously by inflammation! and yet, on examination after death, there is scarcely a well-marked trace of the latter malady. That there are cases, then, of serous effusions, in which the ordinary phenomena of phlegmasia, particularly the discoloration, entirely vanish on the approach of death, or during the last struggles of life, cannot be doubted; indeed, it is not improbable, I think, that there are instances in which this disposition occurs a long time before the individual expires. The absence of redness, therefore, does not prove that there was no inflammation; for the existence of this lesion is sufficiently evinced by the presence of the watery accumulation, and the opacity of the affected membrane. Should there be, in addition, specks, patches, or bands of fibrin, all doubt on the subject must vanish.

"Such, then, being the difficulty of recognizing the presence of inflammation, where every symptom during life gives indubitable evidence of its existence, can it be wondered at that, in the instances above referred to, pathologists should still consider the effusion of serum as the result merely of mechanical obstruction? The question may now be asked,—can such an obstruction exist, to any considerable extent, without producing a state of parts analogous to, if not really identical with, inflammation? I would answer, no. Let it be supposed that the obstacle exists in the ascending hollow vein. This vessel is destined to return the blood from the inferior extremities, the pelvis and abdomen, to the right side of the heart. But, failing in the accomplishment of this object, from the difficulty adverted to, the blood is interrupted in its passage upwards, and congestion of all the vessels, both large and small, is the result. This congestion is not transient, but permanent; and it is scarcely reasonable to presume, judging from our knowledge of the circulation, that this state could exist long without producing an altered condition of the sensibility of the parts affected, attended with more or less redness, and effusion of serosity. The peritonæum and cellular tissue of the limbs are the structures which receive the brunt of the difficulty, and these are parts, it is well known, which are most liberally supplied with serous capillaries. But, it may be said that the effusion may result from perverted action, from irritation, or disturbed function: all this may be true, and yet not in the least invalidate our position. Every body knows that in inflammation there is perverted action, or deranged function, with irritation, or altered sensi-

bility. These terms, therefore, if they mean any thing at all, only denote certain conditions—not the cause of these conditions; as redness, heat, pain, and turgescence are not inflammation, but only so many symptoms of it.

"The preceding remarks are equally applicable to the watery effusions of the serous textures, which occur in association with organic diseases of the glandular and parenchymatous viscera. A large scirrhous tumor of the liver, seated so superficially as to encroach upon and fret its serous investment, is often attended with ascites, although the portal circulation is in no wise obstructed or embarrassed. In the same manner hydrothorax is sometimes induced by tubercles of the lungs; hydrocele by carcinoma of the testicle; hydrocephalus by heterologous growths of the brain. In all these instances the effusion of water is the result, unquestionably, of inflammation, lighted up in the serous covering of the respective organs, by the morbid deposit acting in the capacity of a foreign substance. The dropsical accumulations which supervene upon scarlet feyer, measles, and other eruptive diseases, can be traced, in most cases, directly to phlegmasial irritation of the serous membranes.

"Taking into consideration the preceding facts, and the reasoning founded upon them, the conclusion is obvious that the effusion of serosity, no matter in what part, organ, or region it occurs, is the result, *invariably*, of a process analagous to, if not strictly identical with, inflammation. This process, we repeat, is often very imperfectly marked, both during life and after death, so that the ordinary phenomena of phlegmasia are in no way manifest to our senses. That this conclusion is fully borne out by the premises, is, I think, sufficiently evident; and we shall, therefore, dismiss the subject, in the hope that what has been stated will have a tendency, at least, to arouse the attention of the profession to further investigation respecting it."

On this able and interesting extract, we shall make but one or two passing remarks. Our author insists, that the various effusions to which it refers, are the "result *invariably* of a process *analagous* to, if not identical with inflammation." With this modification of his doctrine we are content to receive it. The analogy may extend as far as congestion and increased serous secretion, are concerned; but congestion is not inflammation. It is, moreover, by no means certain, that all cases of increased serous effusion, are preceded by congestion, for the secretion may itself prevent, seeing that it can

cure congestion. It remains to be shown, that we cannot have increased serous secretion without congestion. A secreting surface when it pours out more than its usual quantity, doubtless receives more than its usual portion of blood, in a given time; but it does not follow, that the capillaries become engorged.

The third chapter treats of effusions of coagulable lymph, to which our author has with propriety applied the term *lymphization.* These are the sources of nearly all the analogous formations, and their study is of the deepest interest to the surgeon and physician. Coagulable lymph, we regard with our author, as exclusively the product of inflammation.

"With the appearance of this substance, every one is familiar. In the majority of instances, it is of a light opaline cast; in others, it is of a pale color, cineritious, of a milky white, or reddish, from the admixture of hœmatorine. When first deposited, it is soft, fluid, and somewhat ropy, allowing itself to be drawn out into little filaments: after a while, however, as its watery particles are being removed, it assumes greater consistence, and is finally converted, in many cases, into firm, dense structure, having all the attributes of the cellular tissue, fibrous membrane, or even cartilage and bone. The period required for these transformations varies from a few weeks to as many months."

The coagulable lymph must not be confounded with the fibrin of the blood, which is but one of its elements—howbeit the most important—for the albumen of the serum enters likewise into its composition. It is, indeed, a secretion not merely in the sense of something extravasated from the vessels, but in the more legitimate sense, of something formed out of the blood and discharged from the capillaries. To its production the red globules *may* also contribute, and, perhaps, to their presence, altered it is true, and made to harmonize with the other altered elements of that fluid, may be

ascribed the spontaneous or independent formation of blood in the effused lymph.

Fibrin, as constituting a false tissue or formation, is found in certain cases of sanguineous extravasations into the cellular membrane or upon the serous surfaces, or when the currents of circulation have been arrested in sections of vessels. Under such circumstances, the fibrin coagulates, the coloring matter is decomposed, and the serum absorbed. An adhesion takes place between the coagulated fibrin and the adjoining surfaces, and, finally, the former receives vessels from the latter. This adhesion is brought about, according to our author, by inflammation, excited in the normal surfaces, by the irritation of coagulum; but Carswell and other pathologists, regard it, and we believe justly, as identical with the adhesion of cardiac polypi to the columnæ carneæ, a mode in which it is probable vegetations of the valves of the heart are formed. Thus the distinguished anatomist whom we have just mentioned, has established two genera of analagous formations—one from coagulable lymph, the other from fibrin; but our author admits only the latter; or, to speak more accurately, regards the concurrence of the former, as essential to the union of the latter with the living textures.

The analagous tissues which our author admits, are the cellular—serous— mucous — cutaneous — vascular, including the erectile—adipous—horny, including the cuticle, hair and nails—fibrous—cartilaginous—cartilaginous and osseous; each of which will be considered in connexion with its archetype in the healthy system.

Lymphization is nature's standing prescription for a great variety of lesions. By it incised wounds are immediately healed, cut arteries closed, and lacerated wounds, attended

necessarily with sloughing, filled up; broken bones are reunited, and necrosed bones replaced; the diffusion of pus restrained; tubercular cavities occasionally walled; the fatal effects of intestinal mortification and sloughing averted; aneurismal arteries obliterated; great surgical operations rendered admissible, and the stumps of amputated limbs speedily healed! On the well-known but absurd aversion of French surgery to the last, our author has the following merited criticism:

"Much good has also resulted in respect to the treatment of incised wounds, whether produced by accident, by the removal of a tumor, or the amputation of a limb. In all these instances it is customary, in every part of the civilized world, with the exception, perhaps, of France, to endeavor, if possible, to bring about union by the first intention; the surgeon well knowing that if this can be effected he will save himself much trouble, and the patient no little suffering and inconvenience. When we reflect upon this subject, it is extremely difficult to account for the great apathy and silly hesitancy which the Parisian practitioners exhibit, with regard to this plan of treatment, about the propriety of which there ought to be but one opinion. In this respect they certainly are fifty years behind the present state of the science,—a circumstance which is so much the more surprising, when it is recollected that they have decidedly the best schools of pathology in the world."

But good and evil are associated, and while lymphization brings us so much of the former, it imposes not a little of the latter. The adhesive and plastic character of lymph, and its long continued contraction or shrinking up, are the sources of these difficulties. Thus, after an extensive loss of skin by sloughing from fire, the new textures often produce deformity, and sometimes an inconvenience which no surgical operation can obviate; again in inflammations of the cheek, adhesions and indurations compress the jaws against each other; from the same cause, the eye-lid becomes agglutinated to the ball; the larynx fatally obstructed with false membrane; the urethra nearly closed up; the intestines combined into a

great bundle; the lungs and pleura cemented to each other; and the solid viscera compressed till they fall into atrophy.

What then can be of deeper interest to the physician and surgeon, than the study of lymphization! How important to know the means of promoting it when necessary, and of averting it when and where it would be mischievous!

Our author next treats of suppuration. He adopts and enforces the sound doctrine that *the formation of pus in whatever part of the body occurring, is the result of inflammatory action, either acute or chronic, simple or specific.* Some of the large and cold abscesses are the offspring of very chronic inflammation—others no doubt are but collections of pus secreted in an inflamed part, absorbed and subsequently deposited in another. Pus may be formed without any solution of continuity. This happens especially in the lungs and their investing membranes. Purulent expectoration without ulceration is not very uncommon, and empyema is a collection of pus in the cavity of the pleura, not, we presume, the consequence of ulceration. We have met with two cases in which the quantity was so great, as to indicate secretion from an extensive surface, and the recovery after paracentisis so rapid and perfect, as almost to demonstrate, that the pleura could not have been the seat of ulcerative absorption, or the subserous tissue the bed of an abscess.

"Pus, when first effused, generally appears in the form of distinct globules, which are dispersed through the affected structure, and can be easily recognized by their pale yellowish color. As the purulent particles increase in number, they gradually become confluent by the absorption of the part concerned, and in this way the matter is at length collected into an abscess."

The account here given varies somewhat from the reports of several other observers. Autenrieth affirms, that if some of the watery moisture, which exudes from the surface of an

inflamed part after the pus has been removed, is collected between two transparent thin plates of tale and allowed to lie in the wound, globules are seen to form gradually in it, to enlarge and become opaqe, while if the fluid is removed altogether from the atmosphere of the living textures, no such change takes place in it. Brugman, also, states that if a supurating surface has been washed clean, the pus is seen to be secreted as a clean fluid, which afterwards become thick and opaque.—Muller Elem. Phys. 469.

The experiments of Gendrin have shown, that pus is formed out of *all* the elements of the blood. He has seen that fluid when extravasated gradually transformed into pus. To this end, however, it must be lodged in the midst of an inflamed tissue.

An attentive study of the characters of pus is essential to the surgeon. These characters will sometimes indicate to him the tissue affected, and very commonly the state of the secreting surface—sometimes even that of the constitution.

Pus is very often imbued with a specific quality—syphilitic, variolous, gonorrhœal, &c., which does not seem to modify its sensible properties. It would be interesting to ascertain, whether the pus which might be secreted under an accidental solution of continuity, in the vicinity of a chancre, or in the midst of variolous pustules would possess a specific character.

But we must turn aside, and bring this extended, perhaps tedious review to a close. There remain many other subjects to be discussed, which we shall make the topics of other articles. Having completed the division of *general* pathological anatomy, we shall from time to time indulge ourselves in the presentation of some of the leading facts touching the morbid anatomy of *particular* organs, connecting them with pathological speculations, and occasional therapeutic remarks.

The high estimate we place on Professor Gross' work may be inferred from the copious presentation we have made of a part of its contents in this article, not less than the intimation we have just given in regard to what remains. If we are not greatly mistaken, its publication will give to the study of pathological anatomy in the United States, and especially in the west and south, where the author is extensively and advantageously known, a decided impulse. The work bears intrinsic evidence of varied and patient research; and while the author has availed himself of nearly all the standard works of Europe, he has not neglected to bring forward the rich results of his own experience. For some time called upon by a large proportion of his brethren in the city where he lives, to make *post mortem* inspections for them, we know his opportunities to have been greatly multiplied; and have often had occasion to mark his accuracy and minuteness. For *our* surgeons and physicians, we regard his work as decidedly superior to that of Andral. That distinguished pathologist, it is well known, reserved his practical remarks for his *Clinique Medicale*, scarcely ever met with in this country; but Professor Gross has sought to connect his with the different pathological appearances which it has been his duty to describe. Moreover, he has given us the morbid anatomy produced by our *own* diseases; and an unusually large proportion of his cases have been in private instead of hospital practice, all of which is calculated to give his facts a special application to western practice.

D.

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DR. BALLARD'S CASE OF EXTIRPATED UTERUS.

We published in the June number of this Journal a brief notice of a remarkable case of forcible removal of the uterus by a midwife, which fell under the observation and treatment of Dr. Ballard, then of Westport, Kentucky, now of Indiana. Our notice has elicited from the Dr. a more circumstantial and authentic account of the case, which we take pleasure in laying before our readers, believing that it will be highly gratifying to them, as it was to us. The promptitude and vigour with which the inflammatory symptoms were met, and the rescue of the unfortunate sufferer from death after so serious a lesion, reflect great credit upon the skill of Dr. Ballard.

H. M.

Sir—I have just perused, in the June number of the Western Journal of Medicine and Surgery, a notice of a case of forcible removal of the uterus and its appendages after the expulsion of the fœtus, which occurred in Oldham county, Kentucky, communicated

to you by my friend, Doctor Drane, which subsequently fell under my care. It was a case novel in its character, and worthy of being reported, and I intended to give it to the profession, and accordingly noted all the symptoms as they occurred at the time, with the minutiæ of medication, the character of the secretions, excretions, etc. But unfortunately my memorandum was destroyed by fire, some years since, and consequently I am unable, at this late period, to present the case to you in detail, as I am obliged to depend altogether upon memory.

This case so far as my reading extends is unique. It occurred about the 20th or 22d of June, 1828, in remarkably hot weather, the mercury ranging from 90° to 100° of Fah. The subject was thirty-two years of age and very corpulent. I saw her about 3 o'clock, P. M. Her breathing was short, difficult, and hurried; her pulse small, quick and thread-like; skin covered with perspiration; she complained of a sense of suffocation, but the hæmorrhage at the time was trifling. I gave her sixty drops of tincture opii which operated like a charm, her breathing becoming comparatively easy in a few minutes, and her pulse more slow, soft, and free from irritation. After she had rested for an hour or two upon the feather-bed on which I found her, she was removed to one of straw, placed in a position to admit a free circulation of air.

About two hours after my arrival my patient became troubled with flatus in the stomach, of which she was relieved by a few grains of magnesia, and a little essence of peppermint. She slept some that night and appeared quite comfortable in the morning. The excessive perspiration had entirely subsided, but her skin was neither hot nor dry. I now directed an ounce of sulph. magnes. to be given every three hours until catharsis should be established, and cloths wet in cold water to be applied over the abdomen, so soon as the temperature of that region should rise above the natural standard. I then left her with a promise to return at 4 o'clock, P. M.

The salts I found had produced no effect, nor were there yet developed any symptoms of inflammation—no soreness, no increase of temperature—the patient free from pain and comfortable. She was ordered to continue the sulph. magnes.

It was now twenty-eight hours since the violence had been done, and I expected inflammation to supervene before morning, and in this I was not mistaken. About 12 o'clock I was summoned in

haste; found my patient complaining of great pain and soreness in the abdomen, especially above the arch of the pubis; pulse full, strong and bounding; skin hot and dry. No action had been produced by the medicine upon the bowels. I immediately from a large orifice took thirty-six ounces of blood from the arm. Her pulse sunk, and she grew faint. An enema was administered which produced three or four copious discharges from the bowels, which, with the bleeding, relieved completely both the pain and arterial excitement. I directed the cold applications to be rigidly attended to, and gave the following powder every two hours: tart. antimon. ¼ gr., nit. potas. 8 grs., pulv. camph. 2 grs. The patient rested well the remainder of the night, and her pulse was quiet, and her skin cool and moist at 5 o'clock, A. M. At 6 the inflammatory action had returned with all its force, and I again took thirty-six ounces of blood from the arm, with the former decided and happy effects.

4 o'clock, P. M., the powders and cold applications have been continued; patient has taken a few spoonfuls of rice water; bowels have been moved three or four times; she had rested well until 3 o'clock, when slight arterial excitement came on, accompanied by a corresponding increase of pain and soreness in the abdomen, but the abstraction of twelve ounces of blood was sufficient to arrest it, and it returned no more. *Morning of the third day.*—Patient free from pain, pulse soft, skin moist, kidneys acting freely, tongue clean. She has had three or four copious dejections from the bowels during the night without any diminution of muscular strength. The antimonial to be continued.

The patient enjoyed from this time an uninterrupted convalescence, and although she continued to take the powders every two hours, for ten or twelve days, and had from six to ten discharges from the bowels every twenty-four hours, she experienced neither nausea nor prostration from their action. During this period the only nutriment she was permitted to take, was six or eight tablespoonfuls of rice water in the twenty-four hours. No secondary hœmorrhage occurred. When the sloughing stage came on, which was well marked by strong fœtor, followed by a moderate purulent discharge, an opposite treatment was observed; and under this she rapidly recovered, and has enjoyed good health, so far as I know, ever since. In this case, there was no lochial discharge, nor was lactation established; shewing the controlling influence of the uterus over this important secretion. Another interesting physiologi-

cal fact.—Inquiries instituted two years after the recovery of my patient convinced me, that the accident had not entirely deprived her of sexual propensities: yet both the ovaria were removed with the uterus.

July, 1840. C. G. BALLARD.

MEDICINE IN PARIS.—TROUSSEAU ON IRON.

Professor Trousseau, it appears from the subjoined letter from Dr. Linton, is reviving an old practice with much success in the great emporium of the Medical Sciences. We have had a good deal of experience in the use of iron in dropsy, amenorrhœa, and intermittent fever, and could cite some striking cases of cure confirmatory of the views of the French Professor. Intermittent fever is a common complaint in this city, and it is well known that it is apt to recur in the spring after having attacked an individual the preceding autumn. Such cases are often exceedingly obstinate, chills continuing often to return at longer or shorter intervals until mid-summer. The appearance of the patients is strongly anemic. For three summers past we have been in the habit of prescribing carbonate of iron for such cases, conjoined with an infusion of the bark of the wild cherry tree—of the former, five grains, in a pill, before each meal, and of the latter, as much as the patient is inclined to drink. In some instances, the iron alone has been used with the desired effect, and will generally prove, we think, in these chronic cases of intermittent fever, a much more efficacious remedy than sulphate of quinine. In the complaints of females, iron was in the highest repute with physicians of a former century. Hoffman relates, that he frequently gave it with remarkable success in obstinate chlorotic cases accompanied with excessive headaches and other violent symptoms. He usually joined with it an alkali, and some vegetable bitter or aromatic. Y.

Paris, May, 1840.

Dear Sir:—I propose, in the present letter, as I promised in my last, to give you a summary of the lectures of Prof. Trousseau on iron. He remarked that in the blood of women and children this metal exists in a less quantity than in that of man—that it is an

ingredient necessary to the health and plasticity of that fluid—that without it the blood is thin, uncoagulable, and incapable of nourishing the organs, or stimulating them to the performance of their functions; and that, in addition to the fact, that this state of things, *anemia*, is more common in women and children than in men, the impoverished state of the fluids, in the latter, when it does exist, depends more upon other causes than upon the loss of the ferruginous principle in the blood. Hence iron is peculiarly a medicine for women and children. In chlorosis, the principal element of which is anemia, or the state above alluded to, this medicine is the sheet anchor. The soluble or the insoluble preparations are to be used according to circumstances. If, for example, the patient be subject to uterine and other hemorrhages, which are often consequent upon a thin and dissolved state of the blood, the soluble forms are to be preferred, because of their directly styptic, in addition to their tonic action—otherwise, the insoluble preparations of the medicine will answer better, as the *carbonas* or *limatura ferri*. This latter, iron filings, he thinks, will subserve most of the objects of administration of iron. The mode of administration is also a matter of importance. It should be taken with the meals of the patient, or just before them—the best of all modes being to incorporate it with the bread. A sufficient quantity may be thus taken without affecting disagreeably the taste of this article of food. This method is especially adapted to anemic children. The dose should at first be small, especially if the stomach does not seem to tolerate the medicine; but should be gradually increased to 20 or 30 grains, for adults—for children proportionably less.

One of the principal faults, Professor T. remarked, in the treatment of anemic affections, consists in leaving off the medication too soon. It should be continued long after the countenance has assumed its wonted color, and the functions their accustomed energy. The disease being chronic demands a chronic course of treatment—a remark applicable to most affections.

The ordinary symptoms of chlorosis, besides the exsanguineous and pale surface, and general debility, are derangements in the menstrual functions—sometimes hemorrhage, sometimes the reverse—a variable appetite, frequently an entire absence of any disposition for food—costive bowels, alternated with diarrhœa—neuralgia, and various other nervous affections.

All these disagreeable symptoms, says the Professor, may be combatted by appropriate means, while the iron is doing the slow but certain work of curing the pathological state in which the disease more essentially consists. For example, an opiate may be given, or the extract of belladonna may be rubbed on the gums, to quiet the neuralgia, which generally affects the nerves of the face; a little aloes may be combined with the iron to remove constipation; or some astringent, when there is diarrhœa, and when there is great want of appetite, the extract of gentian is a valuable adjunct to the metal preparation.

For the preparations of iron to be successful in any disease, it is the opinion of the Professor, that the disease should be dependent on, or closely connected with, anemia. Many physicians, said he, have boasted of the powers of this article in neuralgia, and have published numerous cases in which it has triumphed; but it cures this painful affection *only*, he maintains, when it is connected with an impoverished state of the blood; you will find, gentlemen, said he, in consulting the statistics of this subject, that most of the cases reported as having been cured by this remedy, have been those of anemic women.

Amenorrhœa is a diseased condition which depends upon opposite states of the system, and consequently iron cannot be said to be its specific. It sometimes depends upon a phlogistic and plethoric habit, and in such cases this medicine is by no means to be resorted to. In a word, it is only when connected with anemia, that amenorrhœa calls for this therapeutic agent. The same remark may be made in reference to dysmenorrhœa—it is very common in this affection, said the Professor, for the physician to advise marriage. This is bad advice when given to those whose diseased state is associated with anemia. In such cases, the disease should be cured before marriage. When, however, the habit is plethoric, and the organs generally in a comparatively healthy exercise of their functions, marriage will be found advantageous.

There are no better remedies than the preparations of iron in dropsies dependent on an impoverished condition of the circulating fluids. Every one who has had the opportunity of observing knows, that the thin and dissolved state of the blood which obtains in intermittents and other fevers, predisposes to congestions, hemorrhages, and dropsical infiltrations. The timely administration of iron

will most generally prevent these dangerous sequelæ, and is their best remedy when they have unfortunately supervened.

It will thus be seen, that though the Professor does not regard iron as a specific in any given disease, he attributes to it the power of controlling an important pathological state which is the cause of a great many morbid phenomena, and which enters as a principal element into many obstinate and complicated affections.

I am disposed to think that Professor Trousseau is not much tinctured with the skepticism so prevalent in Paris, with regard to the powers of medicine. He talks like a good English or American practitioner—a comparison, however, which would not be regarded as complimentary by a Frenchman. M. L. L.

Paris, May 20, 1840.

MEDICINAL PROPERTIES OF THE COTTON PLANT.

We are not aware that the cotton plant, (*Gossypium herbaceum,*) so extensively cultivated in the South for its economical uses, has found a place in the Materia Medica, and should, therefore, probably have remained ignorant of its claims to such distinction, had not our attention been drawn to the subject by a letter from E. F. Bouchelle, M. D., of Columbus, Miss. to Prof. Short. According to the observations of Dr. Bouchelle, the cotton plant displays a particular affinity for the female sexual organs, and is capable of modifying their functions in a remarkable manner. He has exhibited it as a remedy in amenorrhea with decided benefit, five cases of which are mentioned by him, but in terms too general to be satisfactory. He seems to regard it as a specific for this form of catamenial derangement, since he expressly states that it is applicable to every case without regard to the state of the system.

But it is as an oxytocic that the article is most celebrated by Dr. Bouchelle, since in his hands it has proved itself to be nowise inferior to the secale cornutum. He has administered it in several cases of labor, when his hopes of a favorable issue were gloomy indeed, and in every instance he was forcibly impressed with its benignantly specific influence upon the parturient action of the uterus. He has given it *experimentally,* also, in cases of natural labor, and with equally satisfactory results. In such cases, he will allow

us to suggest, the remedy maintained a strict neutrality, else it could scarcely have failed to do mischief. In natural labor, the expulsive contractions are justly proportioned, both as to intensity and frequency of recurrence, to the obstacle to be overcome, and they cannot be accelerated or strengthened without risk of injury to both mother and child. Dr. Bouchelle assures us that the cotton plant not only possesses the property of invigorating feeble contractions of the uterine fibres, but that it *originates* expulsive contraction at any period of gestation, and will induce *immediate* abortion when taken in the proper quantity. Should future trials confirm this observation, the gossypium will be entitled to a higher rank as an oxytocic than the secale cornutum, for, it is questionable whether the latter exercises such sway over uterine contraction; at least, we have no satisfactory evidence that it is capable of exciting abortion in a passive and healthy state of the uterus. Dr. Bouchelle avers, however, that the cotton plant is habitually resorted to by slaves in the South for the criminal purpose of inducing abortion, and that it is a fact long and well known in that region that two-thirds, at least, of the likeliest and youngest female slaves are either sterile or invariably miscarry when they do become pregnant, from which he infers, furthermore, that the use of the article destroys the generative capacity. He mentions as a remarkable fact, (and it strikes us in that light too,) that those who resort to it either with the view of inducing abortion or of destroying the generative capacity, experience no detriment to their health therefrom.

The preparation used by Dr. Bouchelle is a decoction made by boiling four ounce of the inner bark of the root in a quart of water until it is reduced to a pint. Dose, a wine-glassful every twenty or thirty minutes as an oxytocic; he does not specify the dose, &c., in amenorrhœa. H. M.

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MEDICINE AND SURGERY.

SEPTEMBER, 1840.

ART. I.—*Thoughts on the action and influence of the Nervous System, and on the means of strengthening and improving them.* By CHARLES CALDWELL, M.D.

THE nervous system consists of the brain, the spinal marrow, and their appendages the nerves.

The nerves are divided into two great classes; nerves of sensation; and nerves of motion. The former of these classes contains numerous subdivisions; the latter but two, nerves of voluntary, and nerves of involuntary motion. Of these two subdivisions of the motory nerves, the latter is still farther divided into nerves of perceptible and nerves of imper-

ceptible involuntary motion. Of perceptible involuntary motion we have manifestations in the actions of the lungs, heart, stomach, and intestines; of imperceptible, or organic motion, in the processes of secretion, nutrition, absorption, calorification, and growth.

The brain which constitutes the centre of the whole nervous system, but more obviously of the nerves of sensation and voluntary motion, consists of the cerebrum and cerebellum, or the larger and the smaller brain, separated from each other by the *tentorium*. By the falx, another process of the same membrane which forms the tentorium, the cerebrum is divided into two similar hemispheres, each of which is subdivided into thirty-six or seven minor portions called organs, constituting the seats or instruments of an equal number of different faculties of the mind. The organs and faculties of each hemisphere differ from one another; but the corresponding organs and faculties of the two hemispheres are alike. Each hemisphere therefore is composed of the same number of organs differing in function from one another, but identical in their several functions with the corresponding organs of the opposite hemisphere. Hence is the brain, in organization and action, a double viscus, in all respects, as it more palpably is with regard to the arrangement of the external senses.

The spinal marrow is made up of three portions or cords, an anterior, a posterior, and a lateral or central one. Of these the anterior cord is connected with the roots of the nerves of voluntary motion; the posterior with the roots, or rather with the terminations of some of the nerves of sensation; while the remaining cord or portion forms what Sir Charles Bell calls the nerves of respiration; but which Muller, Hall, and other physiologists denominate the *excito-motory*

nerves. Under this immediate head I shall only add, that though the sound condition of the whole nervous system is essential to the full health and efficiency of every portion of the body; it is the derangement of the nerves of imperceptible involuntary or organic motion, that produces the most serious and fatal complaints. They are the nerves, whose action is more literally indispensable to the *existence* of life; while the action of the other portions of the nervous system is immediately productive of little or nothing else than *modifications* of life—or rather modifications of vital action. But before proceeding farther in this discussion, a few remarks of a more general and abstract character are requisite.

There are three great sets or groupes of organs which constitute the basis of the being and character of man—which form I mean the most substantial and fundamental part of him, and contribute most essentially to make him what he is. These are the contents of the three great cavities of the body, and their appendages—the cranium, the thorax, and the abdomen. In plainer terms, they are the brain, spinal marrow and nerves, the lungs, heart and blood-vessels, and the chyle-making viscera consisting of the stomach and intestines, the liver, pancreas, and lacteal apparatus.

These three groups of organs are intimately connnected with and dependent on each other, in a twofold way; through sympathy or consent of parts; and through function. On the former ground, the condition of either group, whether morbid or healthy, produces a like condition in one or both of the others; and, on the latter, a derangement or failure of function in one, occasions in the others a corresponding derangement. This connexion and dependence are only stated as facts, no effort being made or intended at present to adduce their causes.

Although these sets of organs are each equally essential to human existence, and equally dependent on one another for soundness and efficiency, they hold different ranks, as respects their functions. The abdominal organs, being fitted only for digestion and chylification, are of the lowest order, and belong in some shape to the lowliest beings of the animal and vegetable kingdoms. The organs of the thorax, being framed for the maturation and circulation of the blood, are of a higher rank, and belong to a higher description of animals. But the cerebral, spinal, and nervous organs, ranking in an order still superior, belong to beings of superior classes, and, in their highest perfection, bestow on man his noblest attributes, and place him at the head of the animal creation. It is plain therefore that the improvement of the nervous system, to the utmost pitch of which it is susceptible, should constitute the leading object of all sorts of education and training. And on the attainment of that object depend the future standing, achievements, and happiness of our race, and the peace, prosperity, and glory of the world.

Is any one inclined to regard this statement as exaggerated at least, if not actually erroneous; and to ask me, whether it is not from the cultivation and improvement of the *mind* that results so beneficial and resplendent are to issue? Were this question put to me, my reply to it would be affirmative; but I would add, that the improvement of the nervous system, especially of the brain, and the improvement of the mind, are the same.

We have no ground to believe, much less are we authorized to assert, that the mind, as an independent and insulated being, is improved, or, in the slightest degree altered by education and training. Indeed the alteration, either for better or worse, of a spiritual substance, by any kind of action or influ-

ence on it that can be practised by us, is an event of which no conception can be formed. The thought is too subtle and etherial for imagination to grasp. Far less do we know what means to employ for the production of the effect. Nor is such an effect necessary for the attainment of the object aimed at in mental education. The improvement of the brain, the organ or instrument with which the mind works in all its operations, is sufficient for the accomplishment of the end held in view. And that that can be effected, by the suitable employment of suitable means, is an issue as certain, as that any other portion of the body can be improved.

The brain is but a mass of living organized matter, and like muscles, membranes, and all other similar masses, can be ameliorated with ease in temperament and tone, activity and power. And when thus advanced in the excellence of its qualities as a mental instrument, it follows of necessity that the mind must employ it with superior effect. This is as much of an absolute truism, in its bearing on the relation between cause and effect, as that a harp of higher finish and tone, when swept with the same skill and power, discourses more "exquisite music," than an instrument of an inferior order when out of tune.

As respects the process best fitted to improve the brain in activity and power, it is too plain to be mistaken, and too perfectly in accordance with reason and experience, to be made a subject of doubt, much less of controversy. It consists in giving to the organ a due amount of suitable exercise, and supplying it sufficiently with wholesome and well arterialized blood. And to do this is not only practicable, but exceedingly easy. That the end, however, may be fully and certainly attained, it is necessary that the brain be properly exercised in *all* its organs—its *affective* as well as its *intellectual*.

Partial exercise, so far as it *is* partial, must be comparatively fruitless. On this topic I shall only farther observe, that it is not, in mathematics, a more incontestible truth, that parallel lines can never meet, than it is in physiology, that exercise, proper alike in kind, quantity, and time of employment, increases the strength and activity of living organized matter of every description.

The questions then that first present themselves are, what is meant by the exercise of the brain? and in what way may such exercise be given to it? Nor is there any difficulty in answering them. The exercise of the brain is the heightened organic action of it; and that is produced by every form of salutary excitement. To exercise the mind is to exercise the brain, whatever may be the kind of mental operation. Is the mind actively engaged in vision, hearing, perception, observation, remembering, imagining, reasoning, thought, calculation, or in any sort of moral or religious feeling? The brain is simultaneously exercised in the organs corresponding to the kind of mental action pursued. Does the mental action consist in the indulgence of any of the passions or emotions?—in love or friendship, resentment or desire of revenge, in ambition, covetiveness, hope, wonder, or the contemplation and enjoyment of the sublime or the beautiful? In each and all of such cases does the brain conform in exercise to that of the mind. And its organs thus excited to action are invigorated and improved in aptitude for the performance of their functions.

That the brain may be the more certainly and competently strengthened and improved, I have said that it must be liberally supplied with arterial blood. And this end is more or less accomplished by the excitement it undergoes. "*Ubi irritatio, ibi afluxus*"—in whatever part of the body irrita-

tion or local excitement occurs, to that spot takes place a conflux of blood. And this is a maxim of as unquestionable truth, as is that which asserts, that things equal to one and the same thing, are equal to one other. Hence in cases of deep passion, such as anger and joy, (which are nothing but high cerebral excitement and action) the countenance is flushed and full, the eyes become fierce or sparkling and prominent, and at times the head turns painful and giddy, in consequence of the rush of blood to the parts. And in these instances the energy and power of action imparted to the brain, are strikingly manifested, by the unwonted force and rapidity of conception and thought, and the augmented fluency and eloquence of utterance, which mark the occasion.

Not only moreover does the blood flow to the brain in a larger volume; it is also more highly arterialized, than usual. Of this the reason is sufficiently obvious. The high and powerful action of the brain produces through sympathy a like condition in the lungs and heart; which latter organ, by its strengthened and accelerated pulsations, pours into the former an augmented stream of blood. Here again there is an increase of action. Respiration becoming more frequent and full, a larger amount of air is received into the lungs. The blood is hence more highly arterialized, and, passing in this condition to the left side of the heart, is thrown in greater force and quantity into the brain, the more thoroughly to vitalize, excite, and invigorate that viscus. Thus do the viscera of those two cavities, the skull and the thorax, operate on each other in a circle, or in a flux and reflux of influence, to the mutual increase of their power and action. Nor is this all.

The viscera of the third great cavity, the abdomen, which prepare the chyle, participate extensively in the general work.

Daily experience and observation testify, that, both through function and sympathy, the digestive organs are closely and powerfully connected with the heart, lungs, and brain. Without a sufficient amount of sound and well matured chyle, wholesome blood cannot be prepared in the quanity required for the uses of the system. And without such a stock of blood, neither vivification nor nourishment can be competently effected, and the brain, in common with other organs, must fail in its functions. Be the substance and nature of the vital principle, what they may, and from whatever source that principle may be derived, the arterial blood possesses it, and implants it in the solids of the body. Hence, other things being alike, the higher the pitch to which the vitalization of the blood is carried, the higher is the vitalization of the whole system; and, as far as consists with health, the greater the accumulation of arterial blood in any particular portion of the system, the higher is the vitality of that portion, and the more vigorous is its action. And this is as true of the brain and whole nervous system, as of other organs. That the brain therefore may possess the fullest amount of vitality, and the amplest power of action, of which it is susceptible, it must be supplied with as large an amount of well arterialized blood, as comports with its health. To express myself in plainer and more definite terms; what is true of every other organ, is equally so of the brain. To bestow on it the utmost power and activity of which it is susceptible, an actual orgasm, or state of vital erection must be produced in in it, by a thorough impregnation of it with arterial blood. The correctness of this position is easily proved. Passion, as already observed, consists in a state of the highest cerebral excitement that can co-exist with health; and it is the source of consummate mental energy and action. Let, therefore, a

dog, a cat, a buck, or any other animal, be suddenly killed, during a paroxysm of rage, and its brain be examined, and the organ will be found almost as deeply injected with blood, as if it were in a state of actual inflammation.

To produce in the nervous system then, including the brain, the highest degree of power and activeness, of which it is susceptible, the work must be commenced in the chylopoetic organs. Those organs must be supplied with a suitable amount of wholesome and nutritious food. And care must be taken, that the amount be kept within the bounds of temperance. Thus will the organs, besides being invigorated themselves by salutary and natural exercise, produce, for the formation of blood, the necessary quantity of well-prepared chyle. For the conversion of this into wholesome blood, the lungs, in addition to a due degree of exercise and excitement by talking, declaiming, shouting, singing, and other forms of muscular action, must be liberally supplied with fresh and unvitiated atmospherical air. The same general muscular exercise that gives strength and activity to the lungs, produces a similar effect on the heart, and qualifies it for a vigorous circulation of the blood. And by such circulation the brain is injected with arterial blood sufficient in amount to invigorate it and prepare it for the extension of its influence, in return for what it has thus received from them, to the lungs, heart, and digestive organs, in common with all other parts of the body.

Such are the mutual influences and dependencies of the three leading groupes of organs of the body, by means of their functions. Their connexions by sympathy are equally stable, and their influences on one another, through that channel, more prompt and powerful in their immediate effects. Where one individual perishes from derangement of the func-

tional influences of those organs, (that of hemorrhagy alone excepted,) thousands perhaps perish by the action of their sympathies. And the same is true in relation to recoveries and cures. The number of diseases removed by sympathy is immeasurably greater than the number successfully treated through the medium of function—but when both are brought into action, the influence is the greater, and the issue the more speedy, certain, and salutary.

But I have not yet stated fully and circumstantially what I mean by the phrase, "the action and influence of the nervous system." A few remarks to that effect therefore will now be in place.

This subject presents itself in several different divisions and bearings, and might be somewhat extensively considered under each of them, though my observations at present respecting it must be brief. It stands equally related to health and disease; and, in each of those conditions of the system, is connected alike with the operations and phenomena of the body and the mind. It is equally concerned moreover with the production, prevention, and cure of disease.

In health the range of nervous influence is co-extensive with that of the body itself. In every part of the system it is manifested and felt. Its most striking manifestation, as respects the body, is made by muscular motion, voluntary and involuntary. More or less however it is concerned in every form of vital action—I mean in the system of man, and in the systems of those animals that most nearly approach him in organization and character. In vegetables, and in many of the lower tribes of animals, a system of nerves exerts no influence, because it has no existence in them. In man however, and in other grades of animated nature where that system is developed, its influence takes part in digestion and

chylification, absorption, nutrition, the arterialization of the blood, calorification, sleeping, waking, and dreaming, secretion, excretion, and growth. Were this statement contested, its proof would be ready; and, as part of it, the following may be received as satisfactory and conclusive. Destroy or paralyze the nerves belonging to any part of the body, and the processes just specified are impaired or extinguished in it.

In disease the nervous system is deeply involved in apoplexy, palsy, epilepsy, St. Vitus's dance, hysteria, tetanus, hydrophobia, colic, and every other form of convulsive and spasmodic affection. In these complaints it is chiefly the brain, spinal marrow and cerebro-spinal nerves that are concerned. They at least are most *obviously* and *strikingly* concerned. And in all febrile diseases, whether slight or severe, the ganglionic nerves are necessarily deranged. There is reason to believe, that in every complaint, some portion of the nervous system is *primarily* assailed, as constituting essentially the out-posts of the body. Nor is it less true that all curative articles make their first impression *immediately* on the nerves, especially the ganglionic nerves, which are instrumental in the production of *organic susceptibility;* and the impression passes to other parts of the system chiefly by sympathy.

In its connexion with the mind, the nervous system, especially the brain, both prevents and produces a variety of diseases. That organ, as has been heretofore observed, is the immediate instrument of the mental affections. And in protecting the system from certain complaints, and also in their production, some of those affections have great influence. Thus, during the prevalence of yellow fever, oriental plague, Asiatic cholera, and other epidemics, habitual timidity predis-

poses to those maladies, and a paroxysm of fear very often excites them. And calmness, firmness, and steady resolution are among their most efficient preventives. The operation of hope, by producing habitual cheerfulness, and a belief in the probability of escape, is also a very valuable safe-guard, unless it give rise to a want of precaution, leading to uncalled-for and perilous exposure. Hence, during the devastation of pestilential epidemics, those individuals (and for the honor of our race they are numerous) who calmly and fearlessly mingle with the sick, and minister with kindness and assiduity to their wants—such persons I say very generally escape the malady; while the fearful and the agitated, who shut themselves up in their own dwellings, shrink from the approach of a nurse or a physician who has visited in the house of sickness, turn pale at the sight of a herse or a coffin, and are startled by the sound of a funeral bell—these tremblers are far the most uniform subjects of attack. The reason is plain. Fear debilitates their systems in all respects, and very especially in their prophylactic powers. To such an extent is this true, that the heroic philanthropists, here alluded to, have been *often* supposed by the multitude, and *always* by the most credulous portion of it, to be in possession of some protective medicine or talisman, or to be under the immediate protection of Heaven. But, as respects either reputed source of safety the supposition is not only groundless, but superstitious and silly. The prophylactic charm is altogether mental. It is a compound of calmness and prudence, temperance, resolution, cheerfulness, and active engagement. I say "active engagement;" for, on such occasions, *action* is infinitely preferable to *inaction*. The former strengthens the system in all its powers; while the latter enfeebles it. And those who are engaged and interested in business, have no leisure to listen

to the alarming narratives of others, or to indulge their own apprehensions of danger. In proof of the correctness of these remarks, facts and anecdotes might be derived in abundance from the lives and histories of fearless philanthropists, who, in pestilential periods, have defied danger and death, in the cause of humanity, and escaped with impunity. That there may be something in the corporeal organisation and temperament, which renders some individuals less susceptible of certain forms of disease than others, is altogether probable. But, in the cases referred to, I cannot doubt that escape is ascribable chiefly to the constitution of the mind.

Disappointed love, grief, the bitterness of violated friendship, jealousy, blighted ambition, wounded pride, the canker of remorse, nostalgia or frustrated longing of absentees to return to the delights of their native countries and their homes, and mental dejection, from whatever cause it may arise, are often productive of serious disease. So are violent paroxysms of the stronger and stormier passions, such as rage, the lust of vengeance, and even an excess of sudden and unlooked-for joy. And all these are but so many manifestations of the existing condition of the nervous system.

The complaints resulting from nervous action correspond in character to the action itself. Is the action sudden, violent, or acute? So are the diseases produced by it. Thus a fit of rage, an abrupt and overwhelming eruption of joy or sorrow, terror or despair, give rise to apoplexy, palsy, hysteria, epilepsy, and other forms of convulsion, and also to hemorragy from the rupture of large blood vessels, or even of the heart itself, and at times to an immediate extinction of life. In the latter case the shock received operates on the brain and nerves like the crush of a falling and ponderous body, or

like a blow on the head from a massy weapon and a powerful arm.

In like correspondence with their nature and character, disappointed love and ambition, moderate but protracted grief, remorse, nostalgia, and other chronic and cerebral affections are productive only of chronic complaints. Of these I may specify, as among the leading maladies thus engendered, madness, dyspepsia, chronic hepatitis, jaundice, general tabes and pulmonary consumption. Other insidious and wasting affections might be added. But, as concerns the instrumentality of nervous influence in the *production* of disease, the foregoing examples are believed to be sufficient for illustration and proof.

The *therapeutic* influence of nervous action is yet to be considered. This is denominated "moral medicine," and is a subject not only extensive in its limits, rich in matter, and abundantly curious, but highly important in the treatment of disease.

As the phraseology itself implies, moral medicine consists in the production of moral or mental impressions immediately on the brain, through the medium of the senses. To render the practice successful, these impressions must be such as are best calculated to produce in the brain a healthful condition. That organ, possessing as it does, a predominant influence over the other parts of the body, does much, when sound itself, to communicate soundness to the entire system. Hence the great importance of keeping it, in all cases, as far as possible, in a state of health. The degree of action moreover maintained in it must be judiciously adapted to the character of the complaint under treatment. That it may prove a salutary remedy, it must be employed with skill, as respects both quantity, manner, and time. If the disease be inflammatory, or one of high excitement with-

out inflammation, the brain should be kept tranquil, more especially if the affection be in any degree cephalic. But in complaints of languid action, the tone and excitement of the brain should be heightened.

This practice is more extensively and perhaps more skilfully pursued in France, than in any other country. Nor is it improbable that, from the superior sensitiveness of their systems, the native French population are more susceptible of benefit from moral medicine, than any other people. And next to them perhaps, in this respect, come the Irish and the natives of the United States, who are certainly a more susceptive and impressible people, than either the British, Hollanders, Belgians, or Germans. Hence the propriety and usefulness of cultivating and employing this form of practice among ourselves.

The forms of disease which moral medicine, when skilfully administered, always soothes and relieves, and often removes, are numerous, and many of them of a grievous and dangerous character. Only a few of them, however, can be specified at present.

Among these, *insanity* holds the most conspicuous place; because it assaults and deranges or entirely destroys what constitutes, not only the highest and brightest attribute, but the very essence of human nature. For the understanding and rational treatment of this malady, an acquaintance with phrenology is indispensable—as literally and positively so, as an acquaintance with the anatomy and physiology of the thoracic viscera is to the rational treatment of complaints of the chest.

The ground of this assertion is plain and substantial. In a vast majority of cases, if not in every one, insanity, at its commencement, is a *local affection.* It is, I mean, a derange-

ment of but *one* or *a few* of the cerebral organs and their functions. For it is not now to be made known that madness is as entirely and essentially a disease of organised matter (the mind as a separate substance or entity being perfectly uninjured) as is pneumonitis or rheumatism. And in perhaps every case, I say, that disease begins in one or two organs, and spreads, with more or less rapidity, until a larger portion of the brain becomes involved.

Nor can any one but a physician acquainted with prenology discover, at this early period, when alone the evil is *certainly* tractable, the exact seat of the complaint, and ascertain to what extent the brain is deranged. No other physician therefore is so well prepared to encounter the malady with the proper form of treatment; especially of moral treatment. But I must dwell on this point no longer. My object is not to write an essay on the cure of madness; but to show that it is a complaint, to whose cure moral medicine is peculiarly adapted; and that, other things being alike, the phrenologist is best qualified to administer that medicine. And if the deranged organs be too highly excited, the proper moral administration consists in reducing that excitement, by bringing them into a state of rest, and transferring their action to other organs, on the principle of revulsion. To illustrate my meaning by a familiar example.

Has the patient induced his malady by intense application to a favorite study? Let him abandon that study, and engage in some other less arduous and severe, and which will give suitable exercise to other cerebral organs than those which he has overworked and injured; or let him relinquish for a time all real study, and enjoy relaxation and pleasurable exercise both mental and corporeal, in travelling, hunting, gardening, or some other amusing pursuit, and in social inter-

course with his family and friends. By such treatment, if adopted in time, and duly persevered in, may insanity be averted with as much certainty and ease, as any other malady can be thrown off, before it has fairly taken root in the system. And by such means it frequently has been averted.

Nostalgia is another complaint within the control of moral medicine. And its treatment is simple. Let the sick return to their country and home, and then is recovery certain. This is but giving rest to an over-excited cerebral organ, and is analogous to the treatment and cure of a sprained ancle-joint, or a fractured limb, by quietude, ease, and soothing applications.

The disease produced by *disappointment in love* is in like manner within the reach of moral medicine. Nor is there the slightest difficulty in its successful treatment, provided the curative means can be applied. And those means may be stated in a few words. They consist in a return of affection by the beloved object, and the rites of matrimony. Except in cases where some confirmed and fatal *secondary* affection is produced by delay, these remedies never fail.

In the cure of *dyspepsia* moral medicine, skillfully employed, is peculiarly efficacious. Indeed if the complaint, as is very often the case, be induced by mental causes, that form of medicine is indispensable, and sufficient of itself, provided its application be opportunely made.

In the treatment of this disease, the removal of care, grief, and all other forms of mental perplexity, and the cheerfulness and serenity thus produced, are among the most useful and important of remedies. Add to them out-of-door exercise, temperance, and the influence of a salubrious atmosphere, and the complaint can hardly fail to give way. Hence the benefit derived by dyspeptics from travelling, a sojourn at watering

places, and sea-voyages, where the operation of all these remediate agents may be united.

To speak on this subject in general terms. In the treatment of every form of disease resulting in any measure from cerebral derangement, the employment of moral medicine is essential to success. The reason is obvious. To do away an effect, you must first do away the cause. If therefore any sort of cerebro-mental influence has produced the complaint, such influence must be removed, else the complaint will remain. And by moral medicine only can the removal be effected.

As heretofore intimated, all persons are not so constituted, as to derive the same degree of benefit from moral medicine. Different individuals are endowed with different shares of sensitiveness and impressibility. And, other things being equal, the effect of moral treatment will be in direct proportion to the impressibility possessed. Hence, for receiving benefit from such treatment, women are more suitable subjects than men; because their sensibility is greater. And, for a similar reason, the youthful of the same sex are more suitable than the older.

In the cure of all chronic, debilitating, and depressing complaints, the agency of hope, resolution, and cheerfulness, faith in remedies, and confidence in physicians, is efficacious and powerful. And all these belong to moral medicine. So does the influence of bravery and ambition in the soldier and the sailor. And that has removed, at times, some of the most grievous and obstinate of maladies. The following instances are in proof of this; and many other similar ones might be added.

During the last war between the United States and Great Britain, a memorable battle was fought by the fleets of the

two nations, on Lake Erie, in the year 1814 or '15. For about forty-eight hours (I think) before the action the two squadrons were in sight of one another, manœuvring each to gain the windward quarter. At the time when the British squadron first made its appearance, and the occurrence of an engagement was no longer doubtful, a full third part, if not more, of the American officers and sailors were confined to their berths, by severe illness, or its debilitating effects. Their complaint was the *lake-fever*. But such was the effect of their desire to come to action with the enemy, and of their ambition and determination to vanquish him, that, at the commencement of the conflict, nearly every man was at his post, prepared to do his duty. The result was a decisive and glorious victory.

Near the close of our revolutionary war, a similar event occurred, in the great naval action, fought not far distant from the American coast, between the French and British fleets, the latter commanded by admiral Rodney, and the former by the Count de Grasse. When the two fleets first descried each other, and an approaching conflict was certain, a very large portion of the British crews were confined to their hammocks by scurvy. From the manœuvring which followed, however, between the parties, each striving to gain the wind of the other, two days or more elapsed, before they came to action. During this interval, so salutary on the British sailors was the influence of their courage, ambition for battle, and confidence of victory, that, when the engagement commenced scarcely a man was absent from his gun. The issue is known. The French fleet was almost annihilated.

Again. In the disastrous retreat of the French army from Moscow, thousands on thousands of the soldiers are known to have perished, exhausted by fatigue and hunger, and stif-

fened by cold. And when, from the insupportable and agonizing agency of those three destroyers, whole regiments were ready to sink to the earth, and there expire, the approach and assault of the Russians or Cossacks on their rear or flank, never failed to revive and arouse them to a desperate and vigorous resistance. And no sooner was the enemy repulsed, than they all returned to their enfeebled condition; and hundreds of them, not from recent wounds, but from exhaustion and torpidity, dropt at the feet of their comrades, to rise no more. So powerful on their wasted and enfeebled systems, was the influence of the pride of soldiership, invincible bravery, and an ambition to conquer.

Once more. The following fact, transmitted to us on respectable authority, is well worthy of the attention of all physicians, but more especially of those of the army and navy.

"In the year 1625, the city of Breda suffered, from a long seige, all the miseries that fatigue, bad provisions, and distress of mind could bring on the inhabitants. Among other misfortunes, the *scurvy* made its appearance, and carried off great numbers. This, added to the other calamities, induced the garrison to incline towards a surrender of the place; when the Prince of Orange, anxious to prevent its loss, and unable to relieve the garrison, contrived, however, to introduce letters addressed to the men, promising them the most speedy assistance. These were accompanied with medicines against the scurvy, said to be of great price, but of still greater efficacy; many more were to be sent there. Three small vials were given to each physician. It was publicly given out, that three or four drops were sufficient to impart a healing virtue to a gallon of water. We now displayed," (says the narrator, who was himself a physician belonging to the

garrison, and engaged with his colleagues in the moral practice—for it was nothing more)—"we now displayed our wonder-working balsams. Not even were the commanders let into the cheat practised on the soldiers. They flocked in crowds about us, every one who had the scurvy soliciting that some part might be reserved for his use. *Cheerfulness* again appears in every countenance, and an universal *faith* prevails in the sovereign virtues of the remedies. The effect of this *delusion* was truly astonishing; for many were quickly and perfectly recovered. Such as had not moved their limbs for a month before, were now seen walking the streets with their limbs sound, straight, and whole. * * * Many, who had declared that they had been rendered worse by all former remedies, recovered in a few days, to their inexpressible joy, and the no less general surprize, by taking what we affirmed to be their gracious Prince's cure." From this occurrence, the drug, whatever it might have been, was afterwards known by the name, sometimes of the "Prince's," and sometimes of the "Commander's Balsam."

It is by the like operation of *hope* and *cheerfulness*, confidence in their own skill and faith in their remedies, that quacks perform many remarkable cures, in cases where educated physicians, employing no moral means, had practised unsuccessfully. Nor is this all.

Homœopathy is virtually a scheme of moral medicine. It is not to be fancied, even by the most enthusiastic credulity, that the material remedies administered by Hahnemann and his followers, in doses so infinitely minute, can have the slightest influence in the cure of diseases. Yet, that cures, at times very remarkable, are produced by their practice, is not to be denied. To what then is their success attributable? The answer is easy. It is the product of several causes—a

temperate and well directed diet and regimen, which they strictly enjoin; and of cheerfulness, hope, and a firm belief in recovery, which they sustain in their patients, by their confident and unqualified assurances of success. Thus do they produce and maintain in the brain a sound and salutary condition; while that organ extends a healing influence throughout the system.

Other things being alike, moral remedies act most powerfully and successfully on persons of an active temperament, whose organs of Hope and Wonder, Benevolence, Ideality, and Firmness are largely developed. Hence; as respects this form of practice, the beneficial effects of an acquaintance with phrenology. It enables the physician to detect in his patients their greater or less fitness for moral treatment.

REVIEWS.

ART. VI.—*Elèments of Pathological Anatomy, illustrated by numerous engravings.* "In Morbis, sive acutis, sive chronicis, viget occultum, per humanas speculationes fere incomprehensible."—Baglivi. By SAMUEL D. GROSS, M.D. Late professor of General Anatomy, Physiology, and Pathological Anatomy, in the Medical Department of the Cincinnati College. Vol. II, 8vo., Boston, 1839. Marsh, Capen, Lyon & Webb and James B. Dow.

(*Continued from the August number.*)

We pass by the next three chapters on hœmorrhage, softening and gangrene, to trace out the progress of purulent secretion through ulceration, granulation and cicatrization, all of which display the presence of pus. Ulceration implies excessive absorption, in connexion with purulent secretion. This remark must, however, be understood with some limitation. During the suppurating process, before the opening of an abscess, we have no evidence of increased absorption, but the reverse; and, subsequently, while the cavity is filling up, absorption does not appear to be active; again, parts which have lost their vital properties slough off, leaving excavations

or depressions, that have not depended on absorption: in many cases, moreover, absorption is deficient and the granulations rise above the proper level. Some, particularly the last of these suppurating surfaces are ulcers. Our author does not believe in ulceration without inflammation conjoined with increased absorption, but concedes that the secretion of pus is not necessary.

We do not, however, believe in the existence of those cases. The purulent secretion may be scanty, but analogy justifies the conclusion, that in all cases where inflammation and excited absorption, by their combined action, produce an ulcer, that is, the destruction of the surface of a tissue, there is purulent secretion. Surgery is often called to grapple with ulcerative action, and sometimes foiled. Ulcers occasionally spread far and wide, in despite of every effort. In many of these cases, the constitution is in fault; in others the ulcerative action is specific.

Granulation, the subject of the next chapter is, intimately associated with this. Granulation exhibits two secretions, the lymphatic and the purulent. Coagulable lymph is the material out of which the granulations are formed, and into which the vessels that supply them so liberally with blood, extend from the surrounding parts; but these granulations are themselves secreting surfaces, and the fluid *they* pour out is pus, perhaps also lymph. The surgeon judges of their healthy condition, as he judges of the state of other secreting organs—by the quality of the discharge.

The natural and desirable termination of this series of sanito-morbid actions is in cicatrization or skinning, which makes the subject of the next chapter; and from which, for the purpose of varying the style of our analysis, we shall make a short extract.

"Cicatrization is the process which nature employs to heal wounds and ulcers. It is the finishing stroke, if the expression be allowable, of granulation,—the labor which is necessary to polish the surface of the sore, to contract its diameter, and to bring it as nearly as possible to a level with the surrounding structures. This process, although it is not limited to the skin, as might be inferred from reading some modern treatises on surgery, is yet most advantageously studied there, as it enables us to follow nature as it were in the different steps which she employs with a view of accomplishing her enterprise.

"The first step in the healing of an ulcer seems to be the subsidence of the inflammation, which becomes gradually less and less, until the surrounding parts regain their natural color, form, and consistence. The sore at the same time sensibly diminishes in diameter, by the contraction and coalescence of its granulations; and its surface, instead of being rough and uneven, assumes a smooth, glassy appearance, its centre, however, being still considerably depressed; or, if the granulations have been very exuberant, unnaturally elevated. Cicatrization is now observed to begin, the first indication of it being a thin, delicate, bluish pellicle, placed along the margin of the breach, where it soon unites with the old skin by an interchange of vessels, nerves, and absorbents. If the part be inspected at a later period, the substance that was thus deposited and organized, will be found to have increased in thickness and density, and to be gradually extending itself towards the centre of the ulcer by the addition of new matter. It is in this manner, by this successive experipheral action, that the denuded surface is eventually covered over."

If we are not greatly mistaken, cicatrization sometimes commences on the disks of ulcers, at a distance from their margins.

We cannot dwell longer on these chapters, all of which abound in elementary truths of great moment to the surgeon; and shall pass to some other modes of termination, or effects of inflammation.

Inflammations of intense violence are liable to end in gangrene. It is common to say, that if the constitution is feeble, a slighted inflammation may destroy the irritability and

organization of the part; but these inflammations, in their intensity, bear perhaps the same relation to the powers of the system, as the former. It is not uncommon for medical men to speak of *a* gangrenous inflammation, but this is generally a misnomer. It is correct to speak of *a* gangrenous *termination* of inflammation.

"When this event is about to take place, the affected structure loses its sensibility, it becomes cold, the blood ceases to circulate, and absorption is suspended.

"The process by which these changes are accomplished is generally progressive, its rapidity varying with the constitution of the patient, the violence of the exciting causes, and, above all, the nature of the suffering structure. Thus, gangrene, in some cases, takes place in the course of a few hours, whilst, in others, it does not make its appearance for several weeks or even months from the commencement of the inflammation. Much diversity prevails amongst the different organs and tissues in regard to their liability to become affected with this lesion. The cellular, cutaneous, and mucous, may be enumerated as the textures which are more frequently seized with mortification than any other; and it is worthy of remark that these are parts which are extremely well supplied with blood, especially the two latter. Nevertheless, in the skin and cellular substance, this event takes place most frequently in situations which are remote from the central organ of the circulation, as on the hands, feet and posterior portions of the trunk. In the mucous system, the parts most liable to mortification are the gums, the inside of the cheeks, the tonsils, the colon, the inferior third of the ileum, the urinary bladder, and the lining membrane of the vulva. The serous membranes, muscles, ligaments, tendons, aponeuroses, and cartilages are rarely affected in this way; and the same remark holds good in reference to the arteries, veins, and absorbents. The three latter of these structures, indeed, seem to possess a most astonishing conservative power, and hence it is not uncommon to find them retain their integrity in the midst of the sphacelated part. In malignant scarlet fever, attended with mortification of the tonsils and upper part of the neck, I have several times seen the common carotid go on in the performance of its function, and the individual recover, notwithstanding the detachment of immense sloughs of the skin and cellular substance; and similar phenomena have often been witnessed in gangrene of the inferior extremities."

When a part mortifies, the vital activity is greater as we advance in all directions from the dead centre. The arrest of the surrounding inflammation, is the arrest of the gangrene. An ulcerative action is then set up, and the decomposed parts are cut loose from the sound. No hœmorrhage follows, because the larger arteries leading to the part have been converted into impervious cords, by the stasis of the blood in their extremities and the adhesion of its fibrin to their internal parietes.

Gangrene does not always depend on violent inflammation from common causes, but occasionally on specific influences acting on the constitution. This is what happens when ergot is used with bread. In these cases, the parts exhibit a certain degree of pain, heat and redness, before they become gangrenous. The *gangrena senilis*, sometimes scarcely manifests the slightest degree of precursory inflammation, as we had an opportunity not long since of observing in a fatal case of that malady, commencing in the heels of an elderly woman and extending forward and upward. We had not the privilege of examining the parts after death. This variety of gangrene has been said to arise from obliteration of the arteries, but is it possible, when obliteration exists, that it is an effect rather than a cause, seeing that the same vessels become obliterated in ordinary mortification?

Another effect of inflammation is *softening*, to which our author has devoted a short chapter. He regards it as among the most unequivocal signs of previous inflammation—that is, one of the legitimate effects of that mode of morbid action, especially when acute. We may assume, that inflammation which occasions softening, does not cause much lymphization. In softening the tissue tends in its organization to that of some other resembling it, but naturally less firm.

Thus bone becomes cartilaginous; cartilage is made to resemble fibro-cartilage; cartilage, fibrous membrane; and this, as well as the serous and mucous membranes, to assume some of the qualities of the cellular. It is obvious, that deposites of coagulable lymph would retard, rather than promote this series of changes. Softening is sometimes the only test of pre-existent inflammation in the brain and gastro-enteric mucous membrane, and hence it is of great importance for the pathological anatomist to have an accurate knowledge of the variations of normal density exhibited by those tissues.

Softening, as we have already said, does not always depend on inflammation. Whatever impairs the nutrition of a tissue, will tend to produce its decomposition.

Induration is in some degree the opposite of mollescence, *ramollisement* or softening, and often shows itself as governed by the same law. Thus cellular may be converted into fibrous membrane, cartilage into bone, &c. But in other cases the tissues are consolidated with each other by deposits among them of plastic lymph. In speaking of the causes of this pathological state Prof. Gross remarks:

"These are referable, for the most part, to inflammation, followed by an effusion of coagulating lymph into the interstitial substance of the affected organ. In the lungs there is frequently, in addition to this, more or less blood poured out, which, combining with the natural structures, gives them a red color. It is thus that red hepatization is established. In chronic cases, on the other hand, the induration is commonly effected by the lymph alone; and hence it is that the organ is usually of a much lighter hue. In the hardening of the subcutaneous cellular tissue of infants, a disease of pretty frequent occurrence in certain districts of Europe, the effused matter is generally impregnated with two coloring principles, the one of an orange red, the other of a bluish shade, both of which are stated by M. Chevreul to exist in the blood."

The chapter on hæmorrhage is full of interest, but we have

not space for its analysis. Professor Gross is of opinion, that in most cases not dependent on a mechanical lesion of the vessels, the hœmorrhagic action is more or less inflammatory. In evidence, among other facts, he cites the constitutional and local symptoms attendant on menstruation, especially when painful. We are aware, that many cases of the latter are inflammatory, but in these the discharge is generally sparing, whereas it ought to be copious, if caused by an inflammatory action. It is impossible to believe, moreover, that inflammation attends the profuse hœmorrhages connected with the final cessation of the menses, inasmuch as none of the ordinary symptoms of inflammation, either pelvic or constitutional, are present; and the discharge is best restrained by a treatment, the reverse of that which is adapted to the cure of inflammation. Hœmorrhages from the other mucous membranes are often mere exhalations; but in hæmoptysis the discharge is not always from the bronchial membrane. We recollect a case in which it came from an artery of considerable size, divided by ulceration, and remaining pervious. We are quite convinced that many hœmorrhages depend on a morbid state of the blood—perhaps on a diminution of its albuminous ingredients, whereby it passes through tissues, which were only competent to its confinement while it remained in a normal state.

Hypertrophy and atrophy are the subjects of separate chapters. We can but glance at them. Hypertrophy may be either general or topical. The last by far the most interesting to the physician and surgeon, generally arises from too great a determination of blood to the part. This may be the result of an irritation maintained within it for some time, raising more or less of inflammatory action; or of its being thrown into excessive action. The heart may furnish an ex-

ample of both. Under the influence of certain passions, that organ becomes hypertrophied; and again, when the valves, seated at the outlet of any of its great cavities, become impaired in their structure, the parietes, from the increased labor they are called upon to perform, acquire abnormal dimensions. We lately saw a heart in the possession of Dr. Enders, in which this was beautifully illustrated by the valvular vegetations, which obstructed the passage of the blood through the organ.

Atrophy, the opposite of hypertrophy, often coexists with it in the same compound organ. Thus while one tissue is reduced below its proper size, another may be increased beyond—and *vice-versa*. More commonly, however, all the tissues of an organ are equally reduced. Atrophy implies deficient nutrition, or excessive absorption. Pressure external or internal frequently leads to it, and is said, in the common parlance of the profession, to do so by promoting absorption. In these cases, however, the supply of blood is limited by the compression of the nutrient arteries. In this manner portions of the lung and liver are occasionally greatly reduced in size—contracting coagulable lymph having been effused about and within them. The causes of atrophy are, however, extremely various. Thus the disuse or rather nonuse of an organ or a limb rapidly reduces its size; and a lesion of its innervation, impairing its function of nutrition, may have the same effect. In old age nearly all the parts of the body pass into a state of atrophy; on the other hand, the whole never rise into hypertrophy. The great bulk which some aged persons exhibit, arises from hypertrophy of the adipose tissue alone.

Our author next arrives at transformations—the conversion of one texture into another. He regards the whole as

"effected under the influence of inflammatory irritation." To this sweeping generalization we are not quite prepared to give our assent. Nevertheless, many transformations take place almost under our eyes, and can be seen to depend on inflammatory action. Thus when the skin is transformed into mucous membranes, it is under circumstances of irritation, and with the appearance of inflammation; when a deep seated abscess does not fill up with granulation and a fistula remains, this artificial efferent duct comes to be lined with a mucous membrane, analagous to that of the excretory vessels of certain glands,—which may be regarded as the transformation of cellular into mucous membrane. A few months since we saw an extensive adipous transformation of the gastrocnemii and other muscles of the leg, in connexion with chronic inflammation and articular ulceration of the ankle, rendering amputation necessary. The skin of the same limb was changed into a tissue nearly resembling cartilage.

Many transformations, however, are not preceded by symptoms of inflammation. Such are ossifications of the cartilages of the ribs, the valves of the heart, and the parietes of the vessels—on the other hand, bones occasionally pass into the state of cartilage, without the signs of inflammation being present. Transformation is, in fact, a lesion of nutrition and may take place with or without inflammation.

The following are the analagous transformations admitted by our author: 1. the cellular—2. the mucous—3. the cutaneous—4. the fibrous—5. the cartilaginous—6. the osseous—7. the adipous. These cannot be formed in or out of any other tissue of the body, indiscriminately. The law which governs their production, is nearly the same that presides over the softening of the tissues. The cellular may pass into the mucous, and this into the dermoid—or into the fibrous

which may then become fibro-cartilaginous, cartilaginous and osseous.

Under no other aspect does the science of general anatomy appear more attractive and useful, than when administering to the study of these transformations; the contemplation of which fills the mind with cheering anticipations of the future condition of pathological science. D.

ART. III.—*Guy's Hospital Reports.* No. viii, April, 1839. Edited by George H. Barlow, M. A. &c., and James P. Barrington, M. A. 8vo. pp. 263. London, 1839.

THE present number of this most excellent and highly practical work contains the following articles:—

On the Disorders of the Brain, connected with diseased Kidneys. By Thomas Addison, M. D.—On Perforations of the Stomach, from Poisoning and Disease. By Alfred T. Taylor.—On the Diurnal Variations of the Pulse. By William Augustus Guy, M. B., &c.—Observations on Poisoning by the Vapours of Burning Charcoal and Coals. By Golding Bird, M. D., &c.—Two cases of Poisoning by the Inhalation of Carburetted Hydrogen. By Thomas Pridgin Teale, F. L. S.—Case of Imperforate Uterus, with Remarks. By Alexander Tweedie.—On Incision in Cases of Occlusion and Rigidity of the Uterus. By Samuel Ashwell, M. D.—Observations on Fibrinous Concretions in the Heart. By Dr. Hughes, M. D., &c.—Analysis of Bones affected with Mollities Ossium. By G. O. Rees, M. D., &c.—Case of Division of the Tibia, for the Cure of Deformity occasioned by a Gun-shot Wound. By Charles Aston Key. Case of Spermatocele, or Varico-

cele, treated Excision of a portion of the Scrotum. By Bransby B. Cooper, F. R. S.—Observations on Abdominal Tumours and Intumescence: illustrated by Cases of Renal Disease. By R. Bright, M. D. F. R. S.

Our object is merely to present in a brief abstract the most interesting matter contained in the above enumerated articles.

1.—*On the Disorders of the Brain, connected with Diseased Kidneys. By Thomas Addison, M. D.*

In the first paragraph of his article, the author states the object of his communication to be:—

"First, To point out the general character and individual forms of cerebral disorder connected with interrupted function of the kidneys, from whatever cause such interrupted function may arise. Secondly, To shew, that, in recent as well as chronic disease of the kidney, the cerebral disorder is not unfrequently the most prominent, and occasionally the only obvious symptom present. And, Thirdly, To establish a means of diagnosis, in such obscure or in unsuspected cases, upon the peculiar character of the cerebral affection."

After stating the general character of cerebral disorder connected with disease of the kidneys, to be "marked by a pale face, a quiet pulse, a contracted or undilated and obedient pupil, and the absence of paralysis"—he enumerates the five following, as the individual forms:

"1. A more or less sudden attack of *quiet stupor;* which may be temporary and repeated; or permanent, ending in death.

"2. A sudden attack of a *peculiar modification of coma and stertor;* which may be temporary, or end in death.

"3. A sudden attack of *convulsions;* which may be temporary, or terminate in death.

"4. *A combination of the two latter;* consisting of a sudden attack of coma and stertor, accompanied by constant or intermitting convulsions.

"5. A state of *dullness of intellect, sluggishness of manner,* and *drowsiness,* often preceded by *giddiness, dimness of sight,* and *pain in the head;* proceeding either to *coma* alone, or to *coma accompanied by convulsions;* the coma presenting the peculiar character already alluded to.

"With respect to the first mentioned form of cerebral disorder connected with renal disease, that of quiet stupor, it is, in its most exquisite form, probably the least frequently met with; the face is pale, the pulse quiet, the pupil natural, or at least obedient to light; and although the patient may lie almost completely motionless, there is no paralysis; for, on attentively watching him for some time, he will be observed slightly to move all the extremities. By agitating him, and speaking loudly, he may sometimes be partially roused for a moment, but quickly relapses into stupor, as before; or it may not be possible to rouse him at all. There is little or no labour of respiration, no stertor, and no convulsions. Slight degrees of it, occasionally precede and pass into the next or second form.

"This second form of cerebral affection is that of a sudden attack of coma with stertor, or, in other words, apoplexy: it is, nevertheless, different from ordinary apoplexy: it is the serous apoplexy of authors, and presents the usual general characters of cerebral affection depending upon renal disease; for the face, instead of being flushed, is, in almost every instance, remarkably pale; the pulse, though sometimes small, and more rarely full, is remarkably quiet, or almost natural; the pupil, also, although occasionally dilated or contracted, is often remarkably natural in size, and obedient to light; and there is no paralysis. When the labour of respiration is very great, the general character is apt to be modified by an accelerated pulse, and occasionally by a slight flush of the countenance. The coma is for the most part complete, so that the patient cannot be roused to intelligence for a single moment. The stertor is very peculiar, and in a great measure characteristic of this form of cerebral affection connected with renal disease; it has not, by any means, in general, the deep, rough, guttural, or nasal sound of ordinary apoplexy: it is sometimes slightly of this kind; but much more commonly the stertor presents more of a hissing character, as if produced by the the air, both in inspiration and in expiration, striking against the hard palate or even against the lips of the patient, rather than against the velum and throat, as in ordinary apoplectic stertor: the act of respiration, too, is usually, from the first, much more hurried than is observed in the coma of ordinary

apoplexy. The peculiar stertor coupled with the pale face has, in more instances than one, enabled me to pronounce with confidence the disease to be renal, without asking a single question, and in cases, too, in whcih no renal disease whatever had for a moment been suspected.

"The third form of cerebral disorder connected with renal disease is that of a sudden attack of convulsions. In this case, also, the countenance is, for the most part, remarkably pale, although, occasionally, slightly flushed at intervals: the pupil is often but little affected: in slight attacks of the kind, the pulse is sometimes singularly quiet; but when the convulsions are severe, and especially when there is such a degree of coma as to be attended with stertor, the heart often sympathizes, and the pulse becomes rapid, irregular, and jerking. This form of cerebral affection often passes into the fourth variety; or the cerebral affection shall take on the form of the fourth variety from the commencement: in the latter case, we have merely a combination of the second and third varieties—the coma, hurried breathing, stertor, and convulsions being so blended together, as often to have led to a dispute, whether the affection ought to be designated apoplexy or epilepsy. From what has been already stated, it may in general be very easily recognized as one of the common forms of cerebral disorder connected with renal disease.

"The fifth variety is that in which the cerebral disorder makes its approach in a more gradual and insidious manner, usually commencing with dulness of intellect, sluggishness of manner, and drowsiness, gradually proceeding to coma, and more or less stertor, with or without convulsions; these states being, at the same time, distinguished by the general indications already pointed out. This form of cerebral disorder appears to be that which most commonly supervenes in the progress of the morbid change of kidney described by Dr. Bright; and is very frequently preceded by giddiness, dimness of sight, and pain in the head."

After having thus given the symptoms and characteristics of cerebral disorder connected with renal disease, the Doctor devotes the remainder of his article to the consideration of a question essentially connected with and naturally growing out of the subject,—viz: "Whether there really exists any discoverable relation between the character of the renal

affection and that of the brain—whether the form, permanence and violence of the cerebral disorder bear any relation whatever to the activity, duration, and extent of the renal disease." Although he confesses himself unable to come to any definite and decided conclusion upon the subject, yet he takes the affirmative of the question with some confidence of its truth, and urges in support of it—" a tendency to a state of quiet stupor," which varies from " sluggishness of intellect, to complete insensibility to surrounding objects," and which is observable in the milder and more transient affections of the kidneys. In connection with this, he gives a case in which these cerebral symptoms were strongly marked, but in which there were none of the ordinary symptoms of nephritis. Upon a post mortem examination, " the cortical parts of the kidneys were found highly injected, of a deep red, or almost chocolate color, and somewhat softened in its texture." He again urges the peculiar convulsions, already described, sometimes proving fatal; from which in other cases the patient recovers, and which he has observed "most frequently in renal dropsy, subsequent to scarlatina," —" and in that form of renal dropsy," which proceeds from cold, and is commonly termed idiopathic. Lastly, he urges the cerebral affection, and " peculiar liability to be suddenly seized with the most alarming and most fatal of all the forms of cerebral disorder occurring in connection with renal disease—profound coma and stertor, with or without convulsions," which are *sometimes* observed in those cases of granular degeneration of the kidneys, as described by Dr. Bright. In regard to this last, he confesses that many cases occur unattended by any cerebral symptoms. All of the facts adduced by the author may be coincidences, or they may not: and they require additional observation to establish their necessary connection.

2.—*Perforations of the Stomach from Disease and Poisoning. By Alfred S. Taylor.*

This paper of Mr. Taylor's relates to the subject as connected with some questions in legal medicine, and his object is to point out the means of diagnosis in cases of death from, or attended with perforations of the stomach, in which poisoning had been or may be suspected.

In treating his subject, (which he does in a very perspicuous and satisfactory manner,) he considers separately the different causes of perforation—1st. perforation from poisons. 2nd. perforation from morbid causes. 3rd. perforation by solution.

In regard to the first he says: "Poisons are capable of inducing perforation of the stomach in two ways: 1. by corrosion—2. by leading to ulceration, and the destruction of the parietes in a circumscribed space by that process." Perforation by corrosion is decidedly the most common, in this division of its causes: and is effected by the "concentrated mineral acids and alkalies, corrosive sublimate, nitrate of silver, and a few others"—the action of which is "purely chemical." The corrosive poisons when taken, immediately produce very severe symptoms, (which the author does not give,) such as those of the most violent gastritis; with excruciating pain in the stomach, severe burning in the throat, &c., most commonly terminating speedily in death. Taking sulphuric acid as an example, (as it is the one most commonly used,) the above symptoms are produced in a very aggravated form; and the post-mortem appearances presented, will be extensive corrosion of the mouth, fauces, and œsophagus; and a perforation of the stomach, sometimes of considerable size, having "rough, irregular edges, often softened and pul-

py." The mucous membrane for some space around the perforation presents a dark brown or black color, of a "sooty appearance." The black matter being removed from the surface, traces of inflammation will be found, provided the individual has lived long enough for that process to have been established. Besides these, the acid passes through the perforation which it has made in the stomach, and extends its ravages to the contiguous viscera. Its presence may be detected in the fluids contained in the stomach, or the cavity of the peritoneum, or in the corroded mucous membrane. Perforation may be produced by nitric acid also; but not so many cases of it have been observed, as it is not so commonly employed as the sulphuric. In those however which have occurred, the edge of the aperture is "generally tinged of a yellow color; or if bile be present in the contents of the stomach, then the mucous coat may have a greenish hue." Perforation has sometimes, but rarely, been produced by oxalic acid, some of the alkalies, particularly potassa, bichloride of mercury, nitrate of silver, and sulphate of copper.

In regard to perforation from ulceration and sloughing as the immediate cause, it is produced by what the author calls "the irritant poisons," which indeed is a generic division of Christison, including the corrosive poisons above spoken of. The author regards perforation from this cause as extremely rare, but that it has been produced probably two or three times by arsenic, and possibly one or two other substances. The perforation when it does occur, very much resembles that from previous disease, and requires the concurrence of a number of collateral circumstances to establish the fact, that it has been produced by poisoning.

With respect to the second class of causes of perforation, viz: "morbid causes," he says it may be a result—"1. of sim-

ple ulceration, sometimes of an acute, but more frequently of a chronic character. 2. of scirrhous ulceration." The first is intended to designate an aperture in which there is an ulcer of some size, of the mucous coat, having well defined but not elevated edges—an ulceration of less dimensions of the muscular coat, and one of still less of the peritoneal coat; thus forming a funnel-shaped perforation; the apex of the funnel being at the peritoneal surface. The second is intended to designate one of the same kind, save that the border of the ulcer and coats of the stomach contiguous to it are elevated, and so hard as to seem "almost cartilaginous."

A person laboring under the first form of ulceration, will suffer from some slight dyspeptic symptoms, or some trivial derangement of the stomach which attracts but little attention, when suddenly, (most commonly after eating,) they will be attacked with vomiting and severe and even excrutiating pain in some part of the abdomen, which continues despite all the means which may be employed, and the patient succumbs in, generally, from eighteen to thirty-six hours. Vomiting though commonly an attendant, is sometimes absent; there is no diarrhœa, the bowels being in general obstinately constipated; and pain between the shoulders has been so frequently observed in these cases as, in the author's estimation, to merit attention, as being probably something more than a mere coincidence. According to the author's observation and the cases which he has introduced into his article, this disease "seems to attack frequently young females, from 18 to 23 years of age, generally unmarried," though it is by no means exclusively confined to them. The post-mortem appearances present, in addition to the ulceration above described, and which is commonly from half an inch to an inch in diameter, and "almost constantly situated in or

near the lesser curvature, between the cardia and pylorus;" "all the marks of severe peritonitis; effusion of serum with coagulable lymph; agglutination of the viscera, and extravasation of the contents of the stomach."

The symptoms of scirrhous ulceration differ from those of the simple form, in there having been for a long time gastric symptoms, such as irritation, &c., together with constitutional disturbance. But when the perforation takes place, and the fatal attack of peritonitis comes on, the symptoms are the same as those above detailed; and the post-mortem appearances are the same, save in the character of the ulceration, which has been distinguised above. And in addition to the characteristics of the scirrhous ulcer already given, we may add that the coats of the stomach are thinned off from within outwards, the peritoneal being reduced to a sharp smooth edge, without any appearance of laceration, as if it had been effected by gradual absorption.

By "perforation by solution" is meant a large opening found in the stomach, generally at its greater extremity, and occupying a large portion of the fundus. "It is large and irregular; the edges are thin, ragged, commonly much softened for a considerable space around, and present that fringed appearance which the stomach might be conceived to acquire by the scraping of its parietes with a blunt knife. "Most commonly there is no vascularity nor trace of any other lesion of the stomach; and so also there is no trace of peritoneal inflammation, when extravasation of the contents of the stomach has taken place, which however does not always occur. 'Tis true that vascularity of the mucous membrane of the stomach may sometimes be present, but it is to be considered as incidental, and depending upon some other cause. In regard to symptoms the author says: "this singular change is either not

indicated by any symptoms during life, or they are of so slight a kind as to lead to no suspicion of the mischief which is going on." The author devotes several pages to the description of cases which he has collected—to the consideration of the cause of the perforation, whether it be the result of disease, and takes place during life, or whether the change is purely post-mortem, effected by the solvent power of the gastric secretion on dead animal matter—and "whether the gastric secretion acts on the stomach by its vital or chemical properties." But we must be content to give only the "conclusions" to which he considers himself justified in coming. They are the following:

"1. That perforations of the stomach, from solution, are very rare in the human subject.

2. That they may occur in healthy and diseased states of the body.

3. That the perforation takes place after death; and depends on the action of the gastric secretion, which, in the opinion of some, is facilitated by a diseased state of the parietes of the stomach. But that the secretion is the chief, if not the sole cause, seems probable, from the fact, that the liver, spleen and diaphragm have also been found softened, the latter even perforated where lying near the aperture in the stomach. We must then imagine, either that these accidentally contiguous parts partake of the same disease as the stomach, or that disease of that organ is not necessary for its coats to become destroyed by the secretion.

4. That the secretion cannot be the healthy gastric-juice, but some altered state of that liquid. This is rendered probable by the facts—1. If it were the ordinary secretion, perforation would be much more common in healthy persons, dying suddenly, soon after a meal. 2. It would not be met with in diseased subjects, or those laboring under disease of the stomach.

5. That the exact nature of the liquid producing the change, and the circumstances to which it owes its solvent power, are unknown."

We come next to speak of the means of diagnosis, in all cases of perforation of the stomach, in reference to the medico-legal questions growing out of them. From what is said upon the subject we may glean the following:

1. That it is hardly possible to confound perforation from either "simple" or "scirrhous ulceration" with that produced by the corrosive poisons. For even in the absence of all general evidence in regard to some such subtance having been taken, a simple inspection of the mouth, faucus, œsophagus, the perforation itself, and perhaps the corrosion of the surrounding viscera, together with an examination of the matters vomited, "consisting of shreds of membrane and altered blood," mixed with sulphuric acid or whatever may have been taken—and the contents of the stomach and cavity of the peritoneum—will settle the question almost beyond the possibility of doubt.

2. That it is principally in distinguishing perforation by disease, from that produced by the "irritant poisons" the difficulty consists. In order to do this with any degree of certainty, it is necessary to take a good many circumstances into consideration.

1. Perforation by disease is comparatively frequent, and moreover seems most apt to attack young females, while that by arsenic, (as an example of the irritant poisons, and the one most commonly employed,) is very rare.

2. In the former, the symptoms do not generally make their appearance for several hours after eating, though occasionally in much less time; whereas those from arsenic almost uniformly come on in about half an hour after the substance containing it has been taken.

3. In cases of the former, the pain in the abdomen comes

on suddenly, is intensely severe, and may be felt in any part of the abdomen; while that from arsenic is one of a burning character, comes on gradually, increases slowly, and is confined to the region of the stomach.

4. "In perforation, vomiting, if it exists, is commonly slight; and it is chiefly confined to what is swallowed. There is no purging; the bowels are generally constipated. In arsenical poisoning, the vomiting is usually severe, and diarrhœa is seldom wanting."

5. In the former death takes place in from eighteen to thirty-six hours, and very often within twenty-four; whereas in the only case given by the author in which perforation was produced by arsenic, the individual lived four days; and of the great number of reported cases in which death resulted from arsenic in twenty-four hours, perforation was not found in one. Indeed it can hardly be supposed that arsenic could effect perforation in so short a space, as it has to accomplish it through the medium of inflammation and ulceration.

6. "In perforation, peritonitis is the sole cause of death. In arsenical poisoning, the fatal result takes place under the peculiar symptoms produced by the poison."

7. In the former, the marks of severe peritoneal inflammation will be found; while in perforation from arsenic, these may also exist, but not necessarily, for the individual may die so soon after perforation has taken place, (from the other effects of the poison,) that there has not been sufficient time for the peritoneal inflammation to set up. Even though this should be found, there will also be the effects of the poison upon the mucous coat.

8. In perforation from disease, there is not necessarily any inflammation of the mucous membrane of the stomach and small bowels, although it may sometimes be present; while in

that from arsenic, the inflammation of the stomach and duodenum, is, generally, considerable, and not unfrequently is also found in the fauces, œsophagus, and rectum.

9. In perforation from disease, no poison will be found, while in that from arsenic, we may expect to find it, either in the matters vomited, in the contents of the stomach, or in the substance of the viscera.

And lastly, if several persons have partaken of the same food, and but one of them is taken ill shortly after, it is strong presumptive evidence against the supposition of poisoning; while, if they are all taken suddenly ill, the reverse obtains.

In regard to perforation by solution; if any thing be known of the symptoms under which the patient labored, there will be but little difficulty in making out the diagnosis, for if the perforation be cadaveric, the disease by which death has been produced will have been characterized by its symptoms, whereas if it have been produced by poisoning, its very evident symptoms will have been present. In case however that none of these facts be attainable, there will be some danger of confounding it with perforation by the "corrosive poisons." The aperture itself simulates, in no inconsiderable degree, that produced by sulphuric acid, for instance; while the contiguous viscera have the appearance of having been acted on by some corrosive substance. But still a diagnosis may be made out with some certainty; by inspecting the condition of the fauces, œsophagus—and by applying chemical tests to the contents of the stomach, and cavity of the peritoneum, together with the coats of the stomach. And if the mucous membrane of the stomach and bowels, together with the peritoneum, evince marks of inflammation, it will greatly heighten the probability of poisoning, provided other circumstances concur to the same point.

The last ten pages of his paper Mr. Taylor devotes to the consideration of the following medico-legal propositions:

"1.—A person may have died from perforation of the stomach through disease and not from poison.
"2. A person laboring under the disease, may be the subject of poison.
"3.—A person laboring under the disease, may have received blows or injuries on the abdomen, in which case it may be necessary to state, whether the perforation did or did not result from the violence used.
"4.—A perforation of the stomach from post-mortem changes may be mistaken for perforation from poison."

In connection with the first, he gives a very interesting case, in which the circumstances of a moral nature—the symptoms under which the patient labored—and some of the post-mortem appearances, were very strongly in favor of the supposition of poisoning, but upon applying the diagnostic tests, already detailed, for perforation by ulceration, the case was made out so clearly that it was not even deemed necessary to have a coroner's inquest over the body.

Two questions very naturally grow out of the second proposition.—"1. Whether the perforation, or the diseased state of the stomach leading to it, was due to poison. 2. Whether the disease or poison was the cause of death."—"The first question will be answered by considering the nature of the substance. Thus, knowing that the corrosives and irritants alone are liable to cause perforation of the stomach, the discovery of a narcotic poison will shew that the disease and the substance taken, could not have had any connection with each other. So again among the irritants, there are some, perhaps the greater number, not likely to be followed by perforation of the stomach."—The second may be determined, by ascertaining the symptoms under which the patient labored; whether those of ulceration, or of poisoning and by the ap-

pearances found upon dissection. See the characteristics of perforation by ulceration, and those by poisoning, already detailed.

With respect to the third proposition, any case of the kind may be determined, with some degree of certainty, by considering the nature of the violence inflicted, and the character of the perforation. Thus, if it proceed from the disease alone, a perforation peculiar to ulceration will be found; whereas, if from the violence, some laceration might be expected.

The fourth proposition presents a case which may possibly happen by the concurrence of extraordinary circumstances; but must necessarily be very rare. A case however may occur, in which the person may labor under the symptoms of irritant poisoning, and perforation be caused after death by the gastric secretion. In such a case, it will be necessary to take into consideration the general circumstances—to ascertain minutely the character of the symptoms—and attend to the post-mortem appearances, as already directed in such cases.

We have thus given an abstract of this paper of Mr. Taylor's, and trust that we will not be considered to have devoted more space to it, than was due to its merits.

3.—*On the diurnal variations of the Pulse. By William Augustus Guy, M. B. &c.*

In former numbers of these reports, Dr. Guy gave the results of his experiments on the effect produced by change of posture on the pulse of healthy males—and on the effect produced by the same cause, as modified by age and sex. The object of his paper now before us, besides that set forth by its title is to show the susceptibility of the pulse to effects by different agents, at different periods of the day.

The experiments are reported fully, and with minuteness; but as it is only desirable to show the general effects, it will suffice to notice the mean results.

Twenty observations made on himself, upon rising in the morning, and the same number, upon going to bed, gave as an average, sixty-four beats in the morning, and fifty-four at night. There was however between the highest number in the morning and the lowest at night, a difference of eighteen beats. "This remarkable diminution towards night" he observes, "took place in spite of the various excitements produced by food, study, or exercise, during a space of fifteen or sixteen hours."

His next series of observations was designed to show the state of the pulse throughout the entire day, in which it was counted every quarter of an hour, from nine and a half in the morning to twelve and a quarter at night: during which time he was engaged in a study, which produced no excitement of mind and required no change of position. From the results, it appears that there was a sudden increase in the number of beats, at a quarter to ten, from sixty to seventy-nine, produced by breakfast. That from this time there was a gradual diminution, until it got as low as fifty-two at quarter past four—that it remained at this, one hour and a quarter, when it suddenly increased again to seventy; which increase was produced by dinner. From this time there was an irregular diminution, falling and then rising again two or three beats, when, at a quarter to twelve, it was again at fifty-two. At twelve, and a quarter past twelve, it was at fifty-six and fifty-five.

Another single series of observations, from nine A. M., until two P. M., showed that the diminution towards evening

is not constant; and also, that there may be considerable fluctuation in the morning as well as in the evening.

Another series designed to ascertain the effect of fasting upon the pulse, and which was protracted during a space of thirteen hours, showed a diminution of six beats, with "occasional fluctuations."

The next observations were made to institute a more exact comparison between the state of the pulse in the morning and evening, by examining it in the morning and evening under precisely the same circumstances. A set of observations consisting of eleven series was first made, to try the effect of continued rest on the morning and evening pulse. A second set, consisting of fourteen series was made, to try the effect of food on the same.

In regard to the first, the plan adopted was to ascertain its frequency before breakfast, as a standard of comparison throughout the day. Breakfast was then taken; and waiting until the pulse had subsided, from the increased frequency produced by the meal, to what it was before breakfast, it was counted every quarter of an hour, for a period varying in different series, from half an hour to two hours; and the mean frequency of the whole was noted. The minimum frequency was also noted. Remaining after dinner then in a state of rest, until the pulse had acquired the same frequency which it had before breakfast, (which was generally about eight or nine in the evening,) tea was taken, consisting of exactly the same with the breakfast, and the observations made as in the morning. The results also were noted as before. This was repeated eleven days, and a table constructed, containing the results of each day. The following is given by Dr. Guy, as "the mean results of the series given in the table."

	max.	min.	mean
*Frequency of the pulse before the observations . . .	66	60	62.36

	Morning: max.	Morning: min.	Morning: mean	Evening: max.	Evening: min.	Evening: mean
Average frequency of the several series of observations	64.5	57.33	61.28	63	56	58.71
Least number of beats in any series of observations	62	56	59.18	62	54	56.54
Differ. between the original frequency and least number	6	0	3.23	8	4	5.82

In the second set of observations, viz: those to show the effect of food, precisely the same plan was adopted as in the above, and the fourteen series of observations give the following mean results:

	max.	min.	mean
"Frequency before the meal	66	60	62.08

	Morning: max.	Morning: min.	Morning: mean	Evening: max.	Evening: min.	Evening: mean
Frequency after meal . . .	81	70	75	74	60	69.15
Increase	21	10	12.92	12	0	7.15
Duration of effect in hours,	3.75	1	2.02	1.75	0	.09
Diminution per hour . . .	12	4	6.4	40	6	7.8
*Exceptions to the rule of progressive diminution	29.21 per cent.			13.33 per cent.		

The following are the average results of six experiments, in which the pulse before the meal was sixty.

	Morning: max.	Morning: min.	Morning: mean	Evening: max.	Evening: min.	Evening: mean
Frequency after the meal, . .	81	70	75	72	60	63
Increase	21	10	15	12	0	8
Duration of effect in hours, .	3.75	2	2.75	1.75	0	87
Diminution per hour . . .	6.9	4	5.45	20	6.8	9.02
Exceptions to the rule of progressive diminution	26.47 per cent.			11.76 per cent.		

After noticing the uniformity of the results, the author remarks that, "by far the most remarkable fact established by these observations, is, that the same food which in the morning increases the frequency of the pulse from five to twelve beats, and keeps it raised above its natural number from one to two hours, may in the evening produce no effect whatever." He

*That is to say, the instances in which the pulse, instead of being less frequent, was more frequent than in the preceding observation, were in the morning in the proportion of 29 per cent., and in the evening of 13 per cent.

refers to his table of details, which our space does not permit us to insert.

Having given the results of his observations much more minutely and in extenso than we have noticed, he proposes the following as facts established by them:

"1. The pulse of a healthy adult male in a state of rest, unexcited either by food or exercise, is most frequent in the morning, and gradually diminishes as the the day advances.

2. The pulse diminishes in frequency more rapidly in the evening than in the morning.

3. The diminution of the frequency of the pulse is more regular and progressive in the evening than in the morning.

4. The effect of food is greater and more lasting in the morning than in the evening; and, in some instances, the same food which in the morning produces an effect considerable both in amount and in duration, has no effect whatever in the evening."

The theory which Dr. Guy proposes upon the subject, and in support of which he brings forward some additional facts and arguments, is that:

"Early in the morning, after we have been completely refreshed by sleep, the strength of the body is at its maximum; all its functions are performed with vigour; and all the causes of excitement produce their greatest effect. But activity of body or of mind, and the application of stimuli of different kinds, produce debility, which goes on increasing as the day advances. So long as the body continues in perfect health, this increasing debility produces a sedative effect on the action of the heart; the frequency of the pulse is diminished; and it becomes less and less affected by the application of stimuli. Sleep restores strength and vigour to the body, and again confers upon it that excitability of which fatigue had deprived it. But fatigue, or the want of rest, may give rise to a state of debility which is incompatible with health; and which is accompanied by increased frequency of pulse, and increased susceptibility of the action of stimuli. It is, of course, quite impossible to draw the line between that debility which is consistent with health, and that which in itself may be regarded as a departure from it— between that degree of exhaus-

tion which is attended by torpor of the functions, and that which is accompanied by increased excitability: but it may be stated, as a general rule, that debility without disease is productive of an infrequent pulse."

Lastly, he suggests as a practical application, that in cases where we wish to afford nourishment with as little excitement as possible, we should give the food in the evening. And that where it is desirable to produce as great an effect as possible, by the exhibition of remedies, we should choose the morning.

4.—*Observations on Poisoning, by the Vapours of Burning Charcoal and Coals. By Golding Bird, M. D., &c.*

Passing over several pages of this paper of Dr. Bird's in which he institutes the question of—what is the poisonous ingredient in the vapours of burning charcoal, &c.—and in reference to which, from the facts and experiments adduced by him, he concludes that it is carbonic acid in a large majority of cases, but that in some few, some other unknown substance is probably the noxious agent,—we shall at once enter upon a notice of his "physiological and pathological effects resulting from the inhalation of charcoal vapour."

The "symptoms" produced by carbonic acid are well marked, but not entirely characteristic, as they simulate very nearly the premonitory symptoms of apoplexy. Under this head however, it is not desirable to condense the page in which the author portrays them, and we shall quote him at some length:

"The person exposed experiences an intense, penetrating, and throbbing headache, accompanied by a sense of weight and heat, especially about the occipital region; strong pulsation in and a sense of tightness across the temples; vertigo; increased action of the heart, often accompanied by violent

palpitations; confusion of ideas, and partial failure of memory, accompanied, in many instances, by a disposition to nausea and hysteric sobbing. If the individual who has been thus exposed be now removed from the vitiated atmosphere, and placed in a current of cool air, especially in the recumbent position, with the application of hot water bottles to his feet, if they be (as under these circumstances they usually become) cold, these symptoms gradually vanish, and in a few hours the patient recovers. But if the person be not so fortunate, and remain exposed to the poisoned atmosphere, a buzzing noise in the ears succeeds, followed or accompanied by partial or total loss of vision; and an undefined, vague, feeling of intense horror or dread, which is rapidly succeeded by an irresistible disposition to somnolency or syncope. Subsequently, and in a space of time varying probably with the state of vitiation of the atmosphere or temperament of the individual, all power of volition disappears, the pulse and palpitation of the heart, which were previously above 100 or 200, diminish in frequency, falling to 40 or 50; respiration becomes slow and laborious; the surface universally cold, and often livid; the lips becoming blue or violet; the eyes retaining, in most cases, their lustre: gradually, these symptoms increase in intensity, with frequently the accession of tetanic convulsions, and in a few instances raging delirium, white or bloody foam appears before the mouth and nostrils, vomiting supervenes, and the sufferer expires in the act; occasionally, however, breathing his last without its occurrence; in which case, the tongue is found protruded, or clenched firmly between the teeth;—the countenance always retaining an expression of deep and placid calm, the victim being generally found lying on the fatal apartment in a calm and sleeplike attitude, which even the vomiting, that often occurs in the last moments of existence, had been as ineffectual in disturbing, as it had been impotent in arousing the sufferer to a sense of his perilous situation. These symptoms are, with a single exception, recognized by all toxicological writers as constant. The exception to which I allude, is, vomiting—a certainly not very unfrequent accompaniment of death by charcoal fumes, although I am aware it has been lately denied as almost impossible to occur. It is for us, however, to regard facts that have occurred, and therefore likely to happen again; rather than assertions of what ought, on theoretical grounds, to take place."

Having detailed the symptoms, the author devotes some space to an enumeration of the "appearances presented by

the corpse"—and the "appearances on dissection." In regard to the former, he gives a table, containing the appearances observed in a number of cases: but the following extract will present the principal ones, and those most uniformly found;

"The body is almost invariably found sprinkled with livid spots of a blueish or reddish brown, passing into violet; these are most numerous in the most depending parts, as about the back and loins; frequently occurring on the extremities, especially on the fore-arm: the limbs are in some cases extremely flexible, in others as rigid; so that no general law will apply to these circumstances: the fingers are often irregularly bent, sometimes stiff and extended; the arms being sometimes thrown across the chest, especially if tentanic spasms have preceded death. The animal heat has been stated by many authors—as Henke, Jarger, Orfila, and Beck—to remain for a preternatural length of time; whilst numerous cases are on record in which the bodies cooled as rapidly as under ordinary circumstances. The same difference of opinion, among authorities of equal weight, exist on the rapid or slow development of the appearances of decomposition. The tongue is found projecting, and often firmly clenched between the teeth; unless vomiting preceded death, in which case the tongue is usually drawn in and concealed. The mouth is often covered with white or bloody foam; the face in some cases is red and bloated, in others pale and unswollen. The eyes generally retain their vivacious and lustrous aspect, rarely being dull; sometimes they are injected; the pupils have, in almost every recorded case, been found dilated;—the whole features presenting an appearance of calm repose; even slight distortion being extremely unfrequent. On examining the interior of the nostrils, they have been, in many cases, found lined with a black fuliginous deposit. The abdomen is generally found distended with air."

"*Appearances on Dissection.*"

Under this head also, the author gives a table, containg the pathological appearances found in 18 cases. The most common are—

Head—Its coverings injected with blood; internally, the

membranes and sinuses "invariably turgid with blood," and serous effusion beneath the arachnoid. Cerebral mass—its surface injected, presents bloody points on being cut, and occasionally softened. The lateral ventricles contain serous effusion, sometimes very abundant. Surface of cerebellum turgid, and serous effusion at the base. Extravasation of blood sometimes takes place from ruptured vessels; and the author gives one case in which there was universal effusion between the arachnoid and pia-mater, dipping down between the convolutions. Blood in the brain sometimes black, at others florid.

Chest—Frequent effusion of bloody serum into the pleura; lungs sometimes expanded and full of blood and air, at others collapsed—vary in appearance from a perfectly natural one, to redness with black spots, and even to a blackish violet color; vessels sometimes empty, at others turgid; mucous membrane of air passages, generally reddish and frothy, sometimes pale, with florid or black blood.

Heart—frequently effusion of bloody serum into the pericardium, both ventricles sometimes empty, the right commonly filled; the left usually empty, but occasionally both are filled with florid or black blood.

Abdomen—Most commonly all the viscera are healthy; sometimes the mucous membrane of the stomach and duodenum has a reddish tint, but which is probably produced by a recent digestion; serous effusion into the peritoneum not unfrequent; arteries empty, veins turgid with dark blood.

The author next raises the question whether carbonic acid acts simply by excluding atmospheric air, or as a specific poison. From the symptoms, vertigo, headache, loss of vision, somnolency, &c., which make their appearance very soon after exposure to the gas, and before any pulmonary symp-

toms occur, and from some experiments, in which a gentleman immersed himself (and afterwards some birds) in this gas, and soon experienced its pecular effects, notwithstanding he breathed pure air by means of a tube; together also with the facts that animals exposed to a mixture of carbonic acid and oxygen expire suddenly, notwithstanding that the oxygen is in as large a proportion as it exists in the atmosphere; from all these, we say, together with other facts already detailed under different heads, the author conceives himself justified in making the following deductions:

"1. That carbonic acid gas, sufficiently diluted with air (as in charcoal-vapor) does not act fatally, by closing the glottis spasmodically, or by excluding oxygen, but as a specific poison.

2. That such an atmosphere will produce death; although it may contain a sufficient amount of oxygen to support life *per se*, and to allow the arterialization of the blood to proceed: on which account no dependence can be placed on the dark or florid color of the blood, as arguments for or against poisoning by carbonic acid gas.

3. That such diluted carbonic acid acts most probably on the nervous system, primarily; and, secondarily, by no means essentially on the circulating fluid.

4. That the death of persons inhaling an atmosphere vitiated by carbonic acid is produced by the accession of apoplexy, often attended by serous effusion into the ventricles, or on the surface of the brain; and occasionally even by extravasation of blood from some cerebral vessel.

5. That no dependence can be placed on the bloated and red, or pale and contracted features; on the liquidity or coagulated state of the blood; on the injection or paleness of the mucous membrane of the intestinal tubes or air-pipes; or on the flexibility or rigidity of the limbs; as positive arguments for or against the action of carbonic acid as a cause of death, in individual cases, falling under medico-legal investigation."

5.—*Two cases of Poisoning by the Inhalation of Carburetted Hydrogen. By Thos. P. Teale, F. L. S.* (*Communicated by C. Aeton Key, Esq.*)

This article details the circumstances connected with two cases of fatal poisoning by carburetted hydrogen gas, which occurred in Leeds, England, December, 1838. The two individuals, an old woman sixty-nine years of age, corpulent and subject to attacks of paralysis, and another female aged twenty-two years, in good health, occupying two small rooms on the ground floor of Potter's Almshouse, were, during the day previous to the night on which they suffered its fatal effects, annoyed by the smell of gas, which escaped from a rupture in a pipe that passed in a few feet of their room. Between the rupture in the pipe and a sink in the floor of a pantry which opened into their sleeping room, there was a free communication for the gas by means of loose earth and rubbish that intervened; and in the evening an explosion of the gas took place in the pantry from a lighted candle being taken into it. After the explosion, by which probably the greater portion of the gas then in the room was consumed, no smell of it was perceived, and apprehending no further danger, the two individuals spoken of retired to the same bed about ten o'clock. About nine the next morning, the neighbors becoming alarmed at their rising so unusually late, broke into the room, immediately perceived a smell of coal gas, the old woman was found lying on her side, lifeless, cold, and the muscles rigid; the young woman was lying upon her face, was dead, but the trunk and extremities were still quite warm and flexible. The bed clothes were but little displaced, and there was no other indication of any struggling by either of them.

Morbid appearances presented by an examination of the body of the young woman about ten hours after death:

External surface generally very pale, save some mottled florid discolorations on the neck and back; features not distorted; pupils moderately dilated; muscles rigid; fingers flexed.

Head—Scalp contained some, but was not loaded with blood; interior membranes, their vessels and sinuses in a normal condition; substance of the brain firm, contained a "very fluid and rather florid blood" which oozed at numerous points when cut into; lateral ventricles contained about an ounce and a half of transparent serum. A small quantity of serum was collected in the spinal canal, but there was no observable lesion in any of its contents.

Chest—The muscles exposed in opening this cavity, together also with those of the abdomen, exhibited a very light and florid appearance. The tissues generally of this cavity and the abdomen were pallid, and exhibited a "remarkable absence of turgidity of the veins.

Heart—Its right side contained a small quantity of fluid blood, not so dark as venous blood generally; left ventricle firmly contracted and empty.

Lungs—Substance generally much less crepitant than natural. Mucous lining red.

Abdomen—Mucous membrane of stomach, "thick, opaque, and easily detached, and presented reddened streaks upon its folds—mucous membrane of the small intestines, generally red, but presented patches in which the redness was most intense. This vascularity was most considerable in the jejunum, next in the duodenum, and least in the ileum. Throughout the same surface also, were "multitudes of extremely minute ecchymoses." Liver—fluid blood oozed freely from

it on being cut. Gall-bladder distended with a thin watery fluid. "The uterus contained a little sanguineous mucus, and its internal membrane was red." (We will here remark that the catamenial discharge had ceased about two days before her death.) "The left ovary contained a body about the size of a pea, having the appearance of clotted blood. The urinary bladder was flaccid, and contained about half an ounce of opaque white fluid: its mucous membrane was white."

Morbid appearances presented by examination of the old woman.

External—Same as in the former case,

Head—Its external the same as in the other. Interior—Sinuses of the dura-mater, contained a moderate quantity of very fluid blood. Considerable sub-arachnoid serous effusion, which was more abundant upon the upper surface of the hemispheres—and somewhat turbid in same places. It was so considerable as to penetrate the fissures between the convolutions, separating and giving them the appearance of being atrophied. The arachnoid and pia-mater were easily detached from the surface of the brain. The substance of the brain contained fluid blood of a florid hue, which escaped at numerous points of an incised surface. Lateral ventricles empty—small, and exhibited numerous very firm adhesions.

Chest.—Generally the same as in the former case. Heart—right side contained rather more, but not turgid with blood, of the same kind, together with a small fibrinous concretion—left side not so firmly contracted, and contained a quantity of the same partially changed blood, together with a small fibrinous concretion. Lungs—more crepitant than in former case, presented the mottled appearance of age, with the intervals too red—considerable blood and frothy fluid oozed upon incision—and the mucous lining was injected.

Abdomen.—Stomach normal—small intestines distended with gas that "burnt with a blue flame"—their mucous membrane presented the same vascularity and ecchymosed appearance as in the former case. "Liver, large and granular, fluid blood escaping freely from its cut surfaces." All the other viscera healthy.

A portion of the gas from the small intestines was analyzed, and found to contain:

"Carbonic acid, ...	36
Carburetted hydrogen, ...	45
Nitrogen, ...	19
	100

It is no unusual thing however to find combustible gas in the intestines of persons who die under a variety of circumstances.

In concluding, the author expresses in plain terms, his opinion that the gas, if respired unmixed with air, would speedily prove fatal, by producing asphyxia; and seems inclined to believe that, in the two cases just detailed, it acted somewhat in the same way; at any rate not as a poison. In this opinion he is supported by experiments which have been made upon animals with this gas, and by the notorious fact that colliers frequently breathe for a considerable time, an atmosphere strongly impregnated with it, without suffering any serious consequences. But on the other hand, from some experiments made upon himself by Sir H. Davy, it would seem to be decidedly a narcotic poison. And again, the absence in both of these cases of any considerable discoloration of the skin, *engorgement* with blood of the liver, spleen and kidneys, and turgid state of the pulmonary vessels, right auricle and ventricle, and of the venous system generally, all of

which are most commonly found in asphyxiated persons, renders it probable that such was not the cause of their death, and heightens the probability of its having acted as a narcotic poison. We cannot urge the similarity of the morbid appearances found, to those produced by the narcotic poisons, for, according to the observations which have as yet been made upon the subject, they are so various that no reliance can be placed upon them. We may add however, that if the gas had acted simply by excluding the due proportion of oxygen, and thence as an asphyxiating one, most probably one of the individuals would have suffered some unpleasant sensation, that would have awakened them, and thus have prevented the fatal effects, or at least have caused some disturbance; whereas there was no indication of their having moved much: which we would readily expect, upon the supposition of their having respired a narcotic poison, producing stupor and insensibility.

6.—*Case of Imperforate Uterus. By Alexander Tweedie.*

In the fourth number (vol. ii, p. 258,) of these Reports, is given the early history of this case, together with an account of her first delivery, and the treatment then employed. With regard to that part of the history of this patient, it is sufficient for our present purpose to say: that she was a rather small woman, but had always enjoyed robust health—had menstruated regularly from her fourteenth year, up to the time of her marriage, which was in February, 1836, in her 23d year—that she never menstruated after she was married—that in November, 1836, she was admitted into Guy's Lying-in Charity—shortly afterwards had a slight sanguineous discharge from the vagina, which continued a day or two—that in about twenty-four or thirty-six hours from its cessation, she felt the

early symptoms of approaching labor—that soon the pains became pretty severe, and continued so but ineffectual, for some hours—that a smooth globular body was discovered to descend into the vagina at each contraction of the uterus—that no os uteri could be found—that the vagina could be traced throughout its whole extent, and was ascertained to be reflected from this globular body just as it commonly is from the neck of the uterus—that during the absence of pains, this body could be distinctly felt to be the head of the child with the relaxed coats of the uterus intervening—that a point was discovered, which seemed to be thinner than the rest, and an incision was made through it antero-posteriorly, to the extent of an inch and a half—that the waters immediately escaped—that subsequent pains caused a considerable extension of the opening by laceration, extending from the reflexion of the vagina at the ileo-pubic junction on the right side, obliquely across towards the sacro-iliac symphysis of the left—that after a protracted labor and considerable exhaustion, the patient was delivered of an asphyxiated child, which however was resuscitated—and that finally she recovered without any very unfavorable symptoms, leaving a small opening at the top of the vagina, with several cicatrized lines radiating from it, and without any cervix uteri.

The present article gives an account of her second confinement, which took place in January, 1838. Her health after her first delivery, had been tolerably good—she had miscarried twice, once at the second month, and the second time at the third month of utero-gestation—and she menstrated regularly during the whole period of lactation, when not pregnant. In this, her second confinement, when she had been in labour 8 hours, the uterine contractions became "intensely powerful," and on examination, there was found at "the ute-

rine extremity of the vagina, an irregular opening, which posteriorly and laterally seemed continuous almost with the vagina, but anteriorly was bounded by a strong, firm, unyielding, rigid edge, upon which at each pain the child's head was forcibly impelled." The opening was about "the area of a penny," and a cicatrized line was distinctly perceptible, running towards the left ilio-pubic junction. The uterine contractions having continued very powerful for twelve hours, without augmenting the size of the opening, it was determined to enlarge it; which was accordingly done to the extent of an inch with a probe-poined bistoury, after the manner of dividing a hernial stricture. Scarcely any blood followed the incision—the uterine contractions almost ceased for a time, and she felt faint. Upon the exhibition however of some weak brandy she revived, the contractions returned, and in less than an hour from the operation, she was delivered of a full grown child, which was asphyiated but restored after some difficulty. As in her former confinement she recovered without any difficulty—suffering only for a few days some tenderness upon pressure over the pubes—and some inconvenience from distention of the left breast by milk, there being in this case the singular coincidence of the imperforate state of the os uteri and absence of the neck of the uterus, with the want of a nipple upon the left breast.

In his remarks upon the probable explanation of this case, Mr. Tweedie observes:

"There being thus no cervix, it is evident that the glandular or follicular structure of the part cannot exist; but it does not therefore follow that there was no opening into the womb prior to impregnation. We believe there was an opening, but not surrounded by the glandular structure which naturally exists here: hence, when impregnation took place, the ordinary mucous secretion could not be found, to seal it up; and is it very unreasonable to imagine, that, under this malforma-

tion of parts, adhesive matter, instead of mucus, might have been poured forth, and thus, by adhesion, as pregnancy advanced, the orifice have become entirely obliterated?"

For the probability of such a state of things having existed in this case, he relies upon the facts of it, as already detailed: and in support of the possibility of such an adhesion's taking place, he quotes first: a case by Dr. A. S. Thomson, of a woman aged 65—who died of dry gangrene—in whom the uterus was found containing 8 quarts of dark brown fluid—its mucous membrane healthy—and the os uteri interiorly "as completely obliterated as if it had never existed"—and internally, or upon its vaginal face, but "faintly marked." Secondly, a case, in which a woman died in labour, from rupture of the cervix uteri, there being no trace of a normal os uteri, save something like a dimple at its ordinary site. Thirdly, a case by professor Hamilton of Edinburgh, of a healthy young woman, who had menstruated regularly up to the time of her first pregnancy—who went to the full term—had severe labour pains, which were ineffectual from an adhesion of the vagina to the extent of an inch, about two inches from its external orifice, which was opened by an incision, when shortly after the labour terminated favourably.

We have thus given all of the important facts connected with this most interesting case.

7.—*On Incision in cases of Occlusion and Rigidity of the Uterus. By Samuel Ashwell, M. D.*

The object of this paper of Dr. Ashwell's is to show—

"1st. That incision is the safest remedy, where the os is in a state of firm and complete closure; or, in other words, where the uterus, so far as its lower orifice is concerned, is imperforate: and

2dly. That in examples of such extreme rigidity of the os, where, after hours of strong uterine effort, the power of dilatation is entirely absent, whether such rigidity arise from disease in the structural organization of the part, or has resulted from previous laceration and ulceration, incision is the best and safest treatment; far preferable to protracted and powerful dilatation of the os by the finger; or, on the principle of non-interference, to leaving the case to the natural efforts."

Complete closure of the os uteri may result from adhesive inflammation, in cases where the aperture is unusually small, and as a consequence of "morbid deposit about the os and cervix, produced either by chronic inflammation or occurring as the result of former laceration or ulceration."

The only condition with which occlusion may be confounded, is obliquity of the uterus; particularly ante-version, in which the os is thrown far upwards and backwards; towards or at the promontory of the sacrum. In regard to the practicability and mode of distinguishing occlusion from obliquity, the Doctor observes—

"There can be but little difficulty in the diagnosis of instances of complete and firm closure of the os. When parturient effort is really established, the lower portion of the uterus, in the form of a tense and large globular mass, is generally forced down very low, sometimes so far, as nearly to reach the external entrance of the vagina. Thus a finger—at all practised in these inquiries—*must* detect an aperture, if there be one; and, if not, the spot where the os uteri, at the time of conception, had been.

A repetition of uterine action will afford abundant opportunities for careful re-examination; so that no apology for indiscreet and dangerous delay can exist. If, too, a spot shall be discovered—more depressed, and of different structure to the surrounding parts, indicating the site of the os uteri at the time of impregnation, it is impossible then to doubt about tne nature of the case; and the only question remaining to be determined, is the precise method of relief."

When upon the subject of treatment, and after urging in strong terms, the impropriety in these cases of occlusion of venesection, and permitting the labor to be protracted to a great length of time, in hopes of discovering an os uteri, or that nature will remedy the evil, the Doctor says: "there are two methods of remedying the closure of this important orifice:

1. By such an amount of pressure by the finger, female catheter, sound or bougie, as shall puncture or open the occlusion: and

2. By incision made by a bistoury or knife."

The first named method may be employed when the occlusion is slight, and depending upon a thin membrane stretched across the os. But the author differs from some writers upon the subject, in thinking that incision is preferable, when this membrane has become completely organized, firm and unyielding. And he also recommends incision when the occlusion is dependent upon adhesion or morbid deposit. He assigns two reasons for this preference. First, that if the finger or bougie, &c., be employed, contusion of the part will necessarily follow, and thus render the patient liable to local or general uterine inflammation. Secondly, he thinks that there is less liability to extensive laceration where a free incision is made, than where a small puncture is made by any of the above mentioned methods. In support of this last position, he cites some cases in which incision was employed, with the effect first named.

Rigidity, which is treated of in the second division of his subject, and which is of much more frequent occurrence than occlusion, may (in that form of it which requires incision) result from a contracted orifice being surrounded by a "structure almost entirely undilatable," or from the cicatrization of abscesses, ulcerations, &c., or from a hard tumor or malignant deposit, which alters the structure of the part.

If the nature of the case be made out in the early stage of labor, it is considered not only prudent but highly important to resort to bloodletting, antimony, opium, &c., with the hope of producing relaxation. But when these means have been resorted to and a sufficient time has been allowed to give nature, with these adjuvants, an opportunity of overcoming the rigidity, and without success, the author says: "The case may then be treated by artificial dilatation or by incision, or it may be left to nature." To adopt the last course, he considers, would be to consign the woman to unlimited laceration or death by inflammation from protracted uterine contraction. To artificial dilatation he is decidedly opposed, for the same reasons which have been assigned against its employment in occlusion. In regard to incision he thinks it should be at once resorted to, wnen it is perceived that nature is unequal to the task. "If there be distressing and constant pain about the neck or body of the uterus, or in any other part; if the countenance becomes turgid and dark; if perspiration issues at every pore, and the pulse is full, strong, quick and incompressible; and if these symptoms continue, although perhaps somewhat lessened by bleeding and antimony; there can be no doubt that recourse snould be had to the incision." We should not wait until the woman is worn out by fruitless contractions, and is already in a state of collapse, when the operation would of course be unavailing towards saving the life of the patient.

After describing the manner of performing the operation, (which is so simple, and will suggest itself so readily, as to render a description of it unnecessary here) Dr. Ashwell devotes the balance of his paper to detailing some cases in which incision had been employed, in which no unpleasant consequences grew out of its use, and success attended it when early enough resorted to.

Selections from American and Foreign Journals.

A new article of the materia medica, the *Monesia*, of South American growth, having attracted no inconsiderable share of attention in the French metropolis, has been recently introduced to the profession in this country by Joseph G. Nancrede, M.D., whose opinion of the eclat which it is destined to win, may be inferred from his eagerness to be the first to extend a welcoming hand to the new comer. We introduce the stranger to our readers, by presenting Dr. Nancrede's letter.

To the Editors of the Medical Examiner:

GENTLEMEN:—With the intention of extending a knowledge of the properties of monesia, and of thus rendering practically useful, to our community, the very interesting paper of Dr. Martin Saint Ange, a translation of which appeared in the last number of your journal, I beg leave, through the medium of its pages, to acquaint the medical profession, that a portion of monesia, recently received from Paris, has been placed in the hands of Mr. F. Brown, corner of Fifth and Chesnut streets, where it can be obtained by those who may wish to prescribe it.

The preparations which have reached me, and which are to be obtained here, are, 1, the aqueous extract; 2, a syrup containing about six grains of the extract to the ounce; 3, a hydro-alcoholic tincture, containing about thirty-two grains to the ounce; 4, an ointment, containing one-eighth of its weight of extract.

While on this subject, I may be permitted to state, that having had in my possession for about a week, this new substance accompanied by the *Gazette Medicale de Paris*, of 19th

October, 1839, in which I read Dr. Martin Saint Ange's original paper, and also the *Notices sur le Monesia* by M. Bernard Derosne, to whom is due the credit of having introduced the new article to the notice of the profession, and who, in conjunction with M. O'Henry, has made of it a chemical analysis, I naturally felt desirous of being the first on this side of the Atlantic to test the properties of so interesting a remedy.

Accordingly I have exhibited it in five cases; and though it may be premature, in so short a period, to form any positive conclusions, yet I may be allowed to state, that, during the short period of its use in my hands, the medicine has realised the expectations held out by its friends in Paris.

I will merely add for the present, that I have exhibited the extract internally in the form of pills, in three cases, of which the first was diarrhœa, of long standing. Here its tonic and astringent qualities evidently arrested the disease. The two next cases were those of patients laboring under dysmenorrhœa; in both which, the symptoms have been materially improved under its exhibition. The fourth case is one of ulceration of the mouth, involving the tongue, of some week's duration, which I have treated by a solution of one part of the tincture, to five of water, as a local application, for the three last days, I think, with some benefit to my patient. The fifth case, is one of scrofulous ulceration, upon which I have applied the powdered extract twice. As yet, I cannot discover any change for the better.

These cases of the administration of the monesia, in several of its preparations, are recent, the oldest being only of a week's date, yet the results are so far encouraging, as to induce the wish that the American Medical Profession, which has now an opportunity of becoming acquanted with monesia, may fairly and fully test the properties of this new addition to the Materia Medica.

Walnut street, April 1840.

A translation of Dr. G. J. Martin St. Ange's paper was published in the London Gazette, and copied from thence into the Examiner; we cannot find room for it, but may say that it is a collection of the testimony of a number of eminent French practitioners in favor of the efficacy of monesia as a remedy for nearly all sorts of diseases:—diarrhœa, hæmoptysis, chronic coughs, scrofula, menorrhagia, dyspepsia, &c. &c.

In the Medical Examiner, of July 11th, 1840, a very interesting case of menorrhagia, of seven weeks' duration, cured by the extract of monesia, is reported by A. D. Chaloner, M. D., which is worthy of attentive perusal, and with it we shall close the testimony that has been adduced in favor of the new remedy.

On *Friday, July, 2d,* at 2½ o'clock, P. M., I was called to see Mrs. L——rs, æt. 35, of sanguine temperament, who was suffering under a severe attack of menorrhagia of *seven weeks' duration.* A month previous to the attack, she had miscarried, (three and a half months advanced in pregnancy,) and recovered under the usual course of treatment; but having over exerted her strength, and taken cold, she was attacked with a profuse "flow of blood from her womb," at first mistaken for the return of the catamenia. It increased, however, gradually, and she had recourse, previously to my visit, to various cold and astringent injections, in connexion with the elixir vitriol. These remedies failing, and the discharge increasing, she became alarmed and sent for me. I found her, on my arrival, sitting up in a chair, countenance pale and anxious, pulse slow, violent pains in lumbar and sacral region, and the slightest motion causing a profuse discharge. She was immediately placed in her bed, ordered to take *cold* drinks, and the following recipe: ℞. Acetat. Plumbi, ʒjss., G. Opii, gr. iv. M. ft. pil. No. xii. S. one every hour, and an injection per vaginam of ℞., Sulphat. Zinci, gr. viii., Aq. Font. fʒi.—her feet and legs were elevated by means of blocks of wood placed beneath the feet of the bedstead, and *perfect rest* enjoined.

July 3d. Had slept some, pulse more natural, skin cool, the discharge undiminished.

Treatment.—Increase the acetas plumbi, &c. to 8 grs. every hour, in conjunction with a third of a grain of opium; continue injections; ice in a bladder to be applied over the pubic region.

Vesper. Feels better; a perceptible diminution of the discharge; treatment to be continued as before.

July 4th. Having been prevented from seeing Mrs. L——rs to-day, my friend, Dr. N. Benedict, saw her for me, and finding the hæmorrhage returning, and bowels constipated, gave her the following ℞. Secale Cornutum, ʒi., Sacch. Albi., G. Acaciæ, q. s., Aq. Font. fʒvi., M. S. a table-spoonful every four hours,—also, these pills: ℞. Hieræ Picræ, ʒss., Sapo.

Venet. gr. iv., Syrup. Rhei, q. s., M. ft. pil. x., S. two every night.

July 5th. Bowels opened; discharge still continues, and profuse, and increased by motion; treatment continued.

July 6th. Returned to the city and saw her with Dr. B. No abatement of the discharge. Treatment—to take of the infusion of secale cornutum a table-spoonful every hour; elixir vitriol, 30 gtt. in "eau sucre," at the same time.

Vesper. Discharge continues; feels very weak. Treatment—℞. Secale Cornutum Pulv. Sacch. Alb. āā ℈ij, M. ft. pulv. No. viii., S. one every half hour until pains are produced.

July 7th. Has taken *seventy grains* of ergot without causing uterine pains, or affecting the discharge. Treatment—℞. Acet. Plumbi ℈jss., Tict. Opii f℥j., Aq. Font. f℥ij., ft. enema, S, one half at once, the remainder in an hour; elixir vitriol, as a tonic, iced drinks, astringent injections per vaginam, warming plaster to sacral region.

July 8th. The uterus, on examination per vaginam, was soft and spongy; in the commencement of the treatment it was slightly swollen, and the anterior lip enlarged; pain in the back and the discharge continue. Treatment—℞. Tinct. Cinnamon f℥ij., S. thirty drops every hour; ℞. Prussiat Ferri, ℥j., G. Aloes, gr. v., Conserv. Rosar. q. s., M. et divid. in pil. xx. S. one four times daily; alum water injections, a compress of folded napkins, and a broad roller, applied tightly over the uterine region.

Vesper. Feels better; bowels opened freely; to take but two pills and tinct. cinnamon, as before; discharge as before.

July 9th. The discharge having increased in frequency and quantity, I procured twelve pills of the EXTRACT OF MONESIA, of three grains each, and at 2 o'clock, P. M. gave her six pills—*one* to be taken every *hour and a half*, until they had an effect upon the discharge.

Vesper. Has taken about three pills, (3 grs. each;) the first pill having caused *pretty severe uterine pains*—as she expressed herself, "*as if she was going to be sick*," (i. e. be confined;) after taking the third pill, the discharge was "*a mere show.*" Treatment—to take the remaing three pills, one every two hours.

July 10. Slept well; pain in the back gone; *the discharge entirely ceased;* feels well; pulse natural; appetite good; skin cool; the uterus contracted and free from pain, on examination per vaginam. Treatment—perfect rest, nourishing diet and cold drinks.

Vesper. Improving; no return of the discharge.

July 11. Still *no return* of the hemorrhage; gaining strength; to take tonics, &c.

July 12. Appetite indifferent; *no return.* ℞. Pulv. Colombœ, Pulv. Sub-Carb. Ferri, Rhei, Zingiberis aa 3j. M. ft. chart. No. xii. S. one three times a day in molasses. Infusion of Prunus Virginiana, a wine-glassful three times a day. Diet—oysters, &c.

Vesper. Has had, owing to the exertion required in changing her bedding, some slight discharge; checked by one or two pills of the *monesia*, every four hours.

July 16. Still using tonics; no pain; *no return of the hemorrhage;* feels well; anxious to get out of bed.

Supposing that the above case may be interesting as showing, that in the *Extract of Monesia* we have a substance capable of causing powerful uterine contractions, even in small doses, and of arresting profuse menorrhagia of long duration, after the exhibition of all the usual remedies had failed, even when pushed to the extreme; and trusting that this hasty outline of the *effects of monesia* in this, to me, troublesome (although not uninteresting) case, may be of some interest to members of the profession generally,

I remain, gentlemen,
Your obedient servant,
A. D. CHALONER, M.D.

Philadelphia, July 10, 1840.

In this case, the *monesia* appeared to arrest the hemorrhage by exciting contraction in the muscular fibres of the uterus, in consequence of which its tissue was condensed, and compression made upon the bleeding vessels. Muscular atony is a frequent cause of metrorrhagia, occurring after abortion or labor at the full term, and in such cases we have been long accustomed to prescribe the *ergot*, in pills or emulson, with the most satisfactory results; indeed, in our hands, it so uniformily succeeds that we are not a little surprised at its failure in Dr. Chaloner's case. It is scarcely necessary to add that the sugar of lead, though a remedy of decided efficacy, when hemorrhage arises from a morbid state of the exhalent vessels, cannot possibly avail when impaired muscular contractility permits the blood to escape from their patulous mouths. On the contrary, it is probable that the lead,

if administered in sufficient quantity, might *paralize* the uterine muscular fibres, as it is known to do certain of the voluntary muscles, and thus aggravate the discharge. Be this as it may, it is certain that lead is not to be confided in as a remedy for this special hemorrhage, and that ergot is calculated directly to fulfil the indication which it presents. If it should be found, on further trial, that the monesia belongs to the same class of remedies as the ergot and acts with greater certainty and efficiency in exciting uterine contraction, it will prove a valuable addition to the materia medica.

H. M.

THE WESTERN JOURNAL.

No. IX.

LOUISVILLE, SEPTEMBER 1, 1840.

THE NATCHEZ TORNADO.

We are happy to learn by a letter from Prof. Forshey, late of Jefferson College, Mississippi, that he is engaged in preparing a volume on the Tornado at Natchez. He thinks its phenomena highly instructive to the scientific meteorologist, and says they have an important bearing on the Espian Theory. From our knowledge of the Professor's qualifications, and his being on the spot at the time, we anticipate a work of high scientific interest. It will probably appear in October. D.

NASAL POLYPUS CURED WITH SANGUINARIA CANADENSIS.

Being lately in Newark, Ohio, Dr. Brice, for more than 30 years a respectable practitioner of that place, narrated to us three cases of polypus of the nostril, which he had permanently cured by the application of the root of the sanguinaria canadensis. One of the patients was a youth, in whom the polypus projected out of the

nostril. A physician in a neighboring town tore away a part or the whole of it, and the operation was followed by profuse hemorrhage. Sometime afterwards the doctor saw him, and the polypus again extended beyond the alœ nasi. The application of the powdered root and the decoction of the sanguinaria soon caused it to assume a pale color and shrink up. Under the continued use of the medicine he entirely recovered.

Another patient was a little girl, in whom the polypus was distinctly seen, but it did not present itself entirely. The same applications effected a radical cure.

A third was a man rather advanced in life, whose nose was much obstructed by the size of the polypus, but it did not descend to the lip. It was permantly removed by the same treatment.

We do not recollect to what extent the sanguinaria has been employed in the treatment of polypus, and are writing these memoranda remote from all books of reference. Should the reader be already familiar with the use of this remedy, he cannot charge us with prolixity in this testimony of its efficacy. D.

STRAMONIUM IN INCIPIENT TRISMUS.

Dr. Brice, whom we have just quoted, was called to a man who had received a wound of the scalp two days before, and found his jaws immovable, and other portons of his muscular system than the maxillary showed incipient tetanus. In the course of two hours, the doctor gave him two tea spoonfuls of the powdered seeds of stramonium; immediately afterwards the spasms ceased. D.

FAMILY CATARACT.

Although cataract is not unknown as a family disease, we have thought the following example worthy of being recorded.

Near Chillicothe, in Ohio, there lives a family by the name of Bunn, in which five cases of that disease have occurred among nine children. We shall say a few words of each, beginning with the oldest.

Hannah, the oldest, near 36, with hazle eyes and reddish chestnut hair, when 25, presented in the centre of her left eye a small white speck, which gradually enlarged till she could only see objects obliquely. About three years after it commenced the sight of the other began to fail. Twelve months ago we found them both cataracts, with capsular opacity. The left eye was weak and we operated on it without subsequent inflammation. A second operation has lately been found necessary, and is likely to be successful.

2. Mary, aged thirty-four, has dark hazle eyes, and hair nearly black—sight good.

3. David, next in time, now twenty-eight, with hazle eyes, began to lose his sight at seventeen, two years afterwards applied to us in Cincinnati, with capsular cataract. A single laceration, not followed by inflammation, removed it.

4. Sarah Ann, now twenty-four, with hazle eyes, and chesnut colored hair, when nine years old, was discovered to have "something" in the pupil of the left eye. In two years she was nearly blind in both eyes. When she was fourteen years old, the capsules of both eyes were successfully lacerated by Dr. French. When the eyes of this patient, the pupil being somewhat dilated, are looked into obliquely it may be seen that the posterior capsule was opaque: the outer ends of the white radiating bands still remaining there.

Nancy with black hair and eyes, died at the age of twenty-two, with good eye sight.

5. Ezekiel, now twenty-two, with hazle eyes and dark hair, when eighteen, observed some failure of sight; and discovered, while he could still see to shoot with a rifle, that he missed the object—the ball invariably passing to the left of the object. When it was fifteen yards off, the ball would generally strike about five inches from it. From the beginning, his eyes although uninflamed were somewhat intolerant of light. In the summer of 1839, we found each eye with central opacity and opake bands radiating from it, the latter in the posterior capsule. Sight much reduced. The capsule of the right eye was lacerated without subsequent inflammation. Two months afterwards, from cold, a severe and protracted inflammation occurred, and we lately found a large fragment of the capsule, *attached* to the outer pupillary margin of the iris, and projecting into the axis of vision. It has been removed, and his sight restored—no inflammation having followed.

6. Joseph aged nineteen, has chesnut hair and hazle eyes—sight unimpaired.

7. Elizabeth aged seventeen years, with hazle eyes and dark brown hair, has intolerance of light, dimness of vision, and the appearance of cataract forming in both eyes.

8. Abraham, aged thirteen, has hair of a flaxen color, and eyes flaxen grey. His sight said not to be very good.

9. Clarissa, the youngest, nine years old, has eyes nearly black, and hair becoming so. Sight good.

The father of these children, now dead, had good vision. Eyes flaxen grey, hair black.

The mother, of a sanguine temperament, has both eyes and hair of a very dark hazle. Her sight is good. Her mother had blue eyes and red hair—her father black hair and eyes. From this union seems to have resulted the hazle chesnut and auburn hue of the coloring matter of the iris and hair of the mother and children. The mother's sight, however, is good; and no case of cataract is known to have existed among her ancestors, or her husband's. All the children are well developed and healthy. D.

EFFECTS OF CAMPHOR ON VEGETABLES.

"The stimulant effects of camphor upon the human and some other animal bodies are well known; but those on vegetables are not only new, but astonishing in their nature. A piece of the woody stem of the tulip-tree, with one flower and two leaves, taken out of a pot of water, containing several other flowers of the same plant, all, to appearance, in the same state, was placed in eight ounces of water, which had been stirred up for some time with one scruple of good camphor. In a little while, an unusually lively appearance became remarkable in the flower in the camphor; while the others, though they had the benefit of a larger quantity of water, were sensibly drooping.

"The two leaves first elevated themselves considerably on their foot stalks; the flower expanded more than in a natural state; the stamina occhives receded from the pistillum; and the three leaves of the calix, or flower-cup, were remarkably reflected back, and grew extremely rigid and elastic. The internal surface of the petals of the flower perspired considerably, though a similar perspiration could not be perceived in the flowers of the same room and temperature. The camphorated plant continued in a very invigorated state for two whole days, after which it began to droop; but the

leaves drooped and decayed sooner than the flower. The other flowers and leaves of the tulip-tree left in simple water, did not live more than half as long as that in the water impregnated with camphor.

"Notwithstanding these surprising effects, no odor of camphor could be traced inany part of the branch, except what was immersed in the fluid. This circumstance seems to render it probable that the camphor was not absorbed by the plant, but that it exerted its remarkable influence entirely through the solids to which it was immediately applied. The appearance, however, was very striking, and might be compared to the beneficial effects of opium on the human constitution. Several other experiments were made with camphor on plants, in all of which was very evident that camphor operated as a powerful and wholesome stimulant. A stalk of yellow iris, with one expanded flower, was taken out of a phial of water in which it had been placed more than a day.

"The flower had begun to droop; but in a very few minutes after being put in a phial of the same size, containing a few grains of camphor, it began to revive, and continued in a vigorous state for many hours. As camphor is but very sparingly soluble in water, it is natural to conclude that the stimulant effects were produced by a very small part of the quantity mingled with the water. This discovery might induce us to make experiments with camphor as a manure, if the expense of trying them on a scale sufficiently large were not excessive. But still, we may apply the camphor in the manner before mentioned; and can that be termed a useless purpose? A few grans of camphor acting as a cordial, will revive a drooping plant, increase its beauty and prolong its existence. In the eye of the florist, these are objects of no mean importance."—*Burt's Observations on the Curiosities of nature.*

REMARKS.

The foregoing extract is from a late number of the National Gazette, published in Philadelphia. The editor of that excellent paper will confer a favor on the writer of these brief and hasty *remarks*, by an early republication of them in his valuable columns.

However interesting or "astonishing in its nature" may appear the fact, that "camphor produces stimulant effects on vegetables," the knowledge of that fact is far from being "*new*." It is certainly so old as to be a product of the last century; whether any older, we are not prepared to say.

The question was once made a subject of debate or conversation in the Philadelphia Medical Society, we think during the sessions of that Institution, in the winter of 1796, '97 or '98; and in the course of the next spring and summer, Dr. Caldwell, then a resident

member of the Society, closed the controversy, if such it was, by a series of experiments satisfactory to himself, as well as to others.

The vegetables on which the Doctor chiefly experimented, were the common Althea, and a species of the Magnolia; and their flower-buds were the parts he especially selected as his subjects.

In the course of his experiments he sometimes lopt from the plant the twigs containing the buds, and immersed them in water holding camphor in solution; and at other times, suffering the twigs to remain on their parent-limbs, he wrapt around them a few folds of cloth, or small bundles of cotton, which he kept constantly moist with the camphor-solution. And, in every instance, the growth and development of the bud was hastened and invigorated, in a remarkable degree. The following was his mode of proceeding.

He selected on the same plant, several twigs containing flower-buds alike in age, healthfulness, and vigor. The twigs moreover were on parts of the plant remote from each other, in order that those of them whose buds were to serve as standards of natural development, might not be acted on by the camphor-exhalation.

Some of these twigs he moistened with the camphor-solution, some with water holding in solution carbonic acid, others with river or rain-water, and the remainder he left to the action alone of the atmosphere, and its native humidity, whether of rain or dew. And the results of his experiments were exceedingly uniform.

The camphorated buds always expanded with far the highest degree of activity. Next in activity were those wet with acidulated water. Still less rapid was the development of the buds moistened with rain or river-water. And when the atmosphere contained but little moisture, the growth and expansion of those not moistened at all were the least active and vigorous of the whole. Nor was this stimulating action of camphor and carbonic acid confined to the flower-buds. The *leaves* of the moistened twigs were similarly influenced by it; though not perhaps to the same extent.

In another course of experiments, by the same gentleman, assafœtida was employed, as the stimulant material, with similar results. The flowers and leaves were uniformly quickened by its action, in their expansion and growth. Nor was this all. The gentle stimulation of electricity produced also on vegetables invigorating effects. They grew under its influence, and put forth their flowers, with superabundant activity.

To the confirmation and establishment of the same principle,

the following experiment farther contributed. Three small grass-patches, distant from each other, were selected. One of them was watered with a camphor-solution, another with a weak solution of assacœtida, and the third with common water; and the results were analogous to those already stated. The grass of the two spots watered with the stimulating solutions grew and flourished with *unusual*, the other with only *common* luxuriance and rapidity.

Shortly after the foregoing facts became known, the late Professor Barton instituted a series of similar experiments, with corresponding results. And, a year or two afterwards, Dr. Church, late of Philadelphia, wrote and published an Inaugural Dissertation, on the same subject. The experiments detailed by him were numerous and well conducted; and their issues were identical with those of the preceding experiments, The growth of vegetables was always hastened by the action of the several stimulants he employed.

The dissertation by Dr. Church is no doubt to be found in the Library of the Pennsylvania Hospital; and it is believed to contain a note from Dr. Caldwell, on the effects of stimulation on vegetable growth.

At this period Dr. Caldwell was engaged in the study of *Philosophical* Botany, especially of the physiology and habits of plants. On certain *night-sleeping* plants he made some experiments not perhaps altogether unworthy of notice. His object was to prevent them from sleeping, which he attempted to do in the following manner.

The somnolent action or rather *inaction* of those plants is known to commence with the commencement of twilight, or a little earlier. To bar their slumbers therefore, the doctor, just before their leaves began to "droop and drowse," commenced on them his process of camphor or assafœtida-stimulation; and, as twilight descended and was just beginning to thicken about them, he added the stimulant action of *artificial light*. This he did, by placing around the plants experimented on, a number of powerfully reflecting lamps, lit up to the highest pitch of brilliancy. And though the result did not quite equal his expectation, it did so to a considerable extent. The stimulation employed rendered the sleep of some of the more sensitive plants, especially we think of the young locust, the mimosa sensitiva, and the eastern acacia, considerably less profound than usual.

But how, we ask, is it possible for these things to be otherwise?

The analogies between vegetables and animals are much greater and more numerous, and the differences between them immeasurably less, than than they are generally supposed to be. So true is this, that no naturalist has yet been able to say, with positive definiteness, where the one class of beings ends, and the other begins.

Vegetables, in common with animals, are organized, living, and susceptible beings—susceptible we mean of vital impression, and capable of vital action and growth. By no physiologist will these positions be contradicted or questioned. They are axioms in the science of organization anp life. Every vital action moreover, whether in vegetables or animals, is as certainly and obviously the product of stimulation, as the descent of a falling body is the product of gravity. This we repeat is an axiom in physiology.

It is in consequence of the stimulation of heat and light and food and moisture, that vegetables take on action and growth in the spring. For food stimulates them, and produces vital action in them, as certainly as it does in relation to animals. And a leading reason why vegetables grow more vigorously, rapidly, and with greater luxuriance in tropical, than they do in temperate and frigid climates, is because they are more abundantly stimulated by heat.

In a word; it is pride and ignorance, much rather than a knowledge of nature, and a correct and becoming sense of his own standing, that inflates man with the vain but flattering belief, that he is demigod or a god, compared with a mushroom. A more thorough knowledge of things as they are, than he now possesses, will yet convince him that the real difference is much less than he now imagines it.

This view of things is greatly strengthened by the late observations of M. Turpin, communicated to the Academy of Science, in Paris, in the course of which he discovered the actual *transformation of globules of milk* into a peculiar species of *mucor or mould.* The mucor he contends did not spring out of the globules, as plants do out of the ground in which they are rooted. They were transformed and converted into the mucor, as seeds are into the plants which they produce. The globules moreover, having given birth to the mould, retained their formal existence no longer, but entirely disappeared, as seeds do after the birth and temporary nourishment of their plants. C. C.

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OCTOBER, 1840.

ART. I.—*An Essay on Tenotomy, with illustrative Cases.* By S. B. RICHARDSON, M. D., Lecturer on Anatomy and Surgery, &c., of Louisville, Ky.

THE operation of Tenotomy in the treatment of club-foot, which has met with such encouraging success recently in the hands of Stromeyer, of Hanover, and Bouvier and Duval, of Paris, (professed orthopedists of the continent of Europe) must be regarded by all who are familiar with the subject as a beautiful illustration of established physiological and pathological principles, and an undoubted advancement in the

treatment of a very extensive but hitherto neglected class of individuals, found in every community.

In the *legitimate* employment of the term, it may be stated in the outset, that *tenotomy* must be regarded as a *discovery*, of such extensive application and importance, as to take rank with those great and acknowledged improvements in medical and surgical science, which have shed such brilliant lustre upon all that appertains to medicine, during the present age.

Like most true discoveries the merit of its origination cannot be awarded to the labors of a single individual, but it will be found upon a careful inquiry into its history, that the facts which led to its deduction were made known *long* anterior to *designed* tendinous section itself.

How encouraging should a fact like this be to those who are laboring in the field of observation, and thus become the benefactors of science, it is needless to insist. It rarely, in fact, falls to the lot of any *one* observer however qualified, to develope a single new principle in any department of knowledge. We are free to assert that every Newton will be found to have had a Gallileo, a Kepler, and other *observers* as his predecessors, and the remark will be found to apply not less appropriately to *medicine* than to *astronomy* and natural philosophy. Science, too, must be regarded, in some sense, as a *unit*, although artificially divided and sub-divided for convenience of study. It is not in the *nature* of true knowledge, but in the limited capacity of the human mind, connected with the comparatively *brief* period allowed for observation, that these artificial arrangements (in too many examples, dismemberments,) have been made and must be allowed to continue. What the God of nature has intimately associated should not in any case, cannot be dissevered except with the most injurious effects. Extra-professional scep-

ticism among the learned as well as the uninformed is known to exist to some extent every where, in reference to the verity of medicine as *a science*—with how much truth, let those, who are immediately interested, give the answer, and abate the odium if found in any degree to exist. Some medical men, too, at no very remote date, and who have received the exalted appellation of *medical philosophers*, are known to have regarded the term *science* applied to medicine, as an unallowable assumption.

By these remarks, we do not wish to be understood as embracing or countenancing the sentiment just referred to; on the contrary we have too much attachment for, and confidence in practical medicine to detract one iota from her just merits, and the noble stand which she has recently assumed, and is destined to occupy (if rightly studied) as an *exact* science. It must in candor, however, be admitted, that medicine has not kept pace with those sciences par excellence entitled *exact*. This is doubtless referrable to more causes than one—chiefly however to the neglect of the inductive or Baconian (may it not be entitled Hippocratic?) method of investigation, and the *multiplicity* of phenomena presented in *vital* manifestations, coupled with the heretofore almost inextinguishable thirst for theorizing, and *system building*, in medicine. The perception of this has led many distinguished physicians of the present age on the continent of Europe and elsewhere, to abandon the false route into which so many have strayed and wasted their energies, and to return to the path of patient observation,—admitting that there is not as yet a sufficient number of well established facts to serve as a basis for a theory, or, more properly, to evolve one or more controlling principles that are to organic what gravitation is to inorganic matter.

Without any farther preliminary remarks, we proceed to the subject which claims our immediate consideration.

When in the progress of pathological investigations it was ascertained, that *club-foot* essentially depends, on a *permanently shortened* or *contracted* state of certain muscles and tendons, connected with the movement of the foot upon the leg, and in some instances the toes upon the foot, the failure of every description of machinery to remedy it was easily accounted for. It was not less palpable, from what is observed in accidental rupture of the tendo achilles, as well as from direct experiment upon inferior animals, that nearly all obstacles to the *extreme* flexion of the foot upon the leg is overcome by a *section* of the tendons of the *extensor* muscles.

I have in my private cabinet a peculiarly interesting specimen of that variety of club-foot technically styled *Talipes valgus*, which I fortunately obtained for dissection whilst engaged in investigating this subject, in the capital of France. It is not apparent upon a careful inspection of it at the present time, that inflammatory irritation had ever invaded any of the elements or tissues which enter into the constitution of the foot and leg, nor was this the case when the preparation was made, now about two years ago—unless the thickening and induration of the skin and cellular substance, and the production of adventitious *bursæ mucosæ* corresponding with the *new points of pressure* upon the side or top of the foot, may be regarded as possessing this character.

The deformity, then, in the preparation before me, in which the points of the toes are thrown *outward* and backward, the inner margin of the foot downward, and the sole looking backward, is connected with a *permanently shortened* and rigid state of those tendons whose physiological action

tends to incline the foot and toe in this particular position. Hence arises the principle or rule by which the deformity in *any of its species* or varieties may at once be recognized; viz: Those muscles with their corresponding tendons, whose individual or combined action, when *strongly contracted, tend* to its production in a *normal* condition of the parts, are concerned in producing or maintaining the deformity in question. Deformities of the foot (which may be congenital or acquired) have the generic appellation of *Talipes* referring to the ankle, or pastern of a beast, or more classically, perhaps, *Kyllopodia.** Of this, three varieties are distinguishable. 1st. That in which it is turned inward, (*vara,*) 2d. That in which the foot is turned outward, (*valga.;*) and 3d. That in which the foot, from the *extreme extension*, is turned upon itself, and rests upon the ground by the *superior surface* of its phalangeal extremity, (*equina*) called, also, phalangeal club-foot.

It was suggested long ago, that these deformities were caused *primarily* by an irregular conformation of one or more of the tarsal bones, by a defect of *equilibrium* in the action of the muscles which move the foot, or an abnormal insertion of one or more of their tendons. To these I will take the liberty of adding an ingenious supposition of M. Duval, of Paris, which I received from him in a conversation upon this subject. This gentleman is well known as a practical orthopedist of distinction in that capital, and by his numerous memoirs delivered before the French Institute, and the Royal Academy of medicine, upon subjects connected with his speciality. He holds that the *primary* cause of these deformities resides in the cerebro-spinal axis, and that they are in

* From *kullos*, crooked, and *pous-podos*, foot.

fact to be referred to the nervous system *originally*, and secondarily to spasmodic contraction of certain muscles.

This is confessedly hypothetical, especially in reference to much the largest class of these affections which are congenital—but whilst little is, or perhaps ever will be certainly known, of the pathology of the fœtus in utero, we confess that there seems to be some ground for the supposition when we consider the violent and protracted motions of the fœtus in utero, sometimes observed, which, coupled with some other facts connected with practical obstetricy, justifies the inference that the fœtus in utero is more subject to *nervous and spasmodic affections*, than to any other class of diseases.

We are inclined to believe, moreover, that an unnatural and *distorted posture* of the fœtus, during the early periods of gestation, may have occasional agency in the production and maintenance of these deformed developments.

It might be considered appropriate here to consider the supposed influences of mental impression or emotion of the mother during gestation, as an original *primordial* cause of *these*, with other deformities and *marks*. But, whilst this is a deep rooted impression in the popular mind, possessing like most kindred prejudices connected with *occult* matters of science, some *apparent* facts upon which they are predicated; it must be acknowledged that it has been a fertile subject of speculation with physiological and obstetric writers, from which nothing valuable in science has ever resulted. The facts we know, and these are sufficient for our purpose.

Not so with those influences connected with *hereditary descent*—these are ever operative, and extensively so. Like begets like in disease, as well as in health. The records of the profession abound with illustrations of the fact in refer-

ence to the deformities under consideration, and those which are congenital must continue to multiply annually in increasing numbers, unless more attention is bestowed upon the subject of their nature, and the improved methods which science is holding out for their successful treatment.

I could cite numerous instances which have come to my knowledge, in which club-footed children were the offspring of a parent with like deformity; I will cite however only one, the most remarkable. I was consulted in the autumn of 1839 by a young gentleman of the South with double club foot, who assured me that an instance presented in Mississippi in which an entire family of six or seven children, male and female, were the offspring of a club footed father!

Nevertheless it must be regretted, with all the facts and arguments before us, that in this, as well as in many other morbid conditions appertaining to the pathology of *extra* uterine life, the original or starting point of diseased action is surrounded with such obscurity, that its correct interpretation will not speedily, if ever, be obtained.

Whatever may be the cause of any of the varieties of the deformity under consideration—whether the case be congenital or accidental, the weight of the body in the erect position and during locomotion powerfully contributes to augment it. This is especially the case during adolescence, where the subject has been accustomed to an *active life*, and the trunk and superior extremities are correspondingly developed, or where obesity obtains either at the period referred to, or in mature life. I have been repeatedly consulted by those who upon inquiry assured me, that their deformities had augmented more in a few months about the period of life or under the circumstances referred to than in as many years at any former time.

In the first and second species, in which the torsion of the foot is inwards or outwards, the os calcis, cuboides, scaphoides and cuneiform bones experience an abnormal rotation upon the antero-posterior axis of the foot. In the first species, in which the torsion is inwards and which is by far the most common, the os calcis is thrown outwards with its posterior extremity into which the tendo-achilles is inserted, more or less drawn upward, the external margin, and sometimes in extreme *torsion*, part of the *superior surface* of the os cuboides, presents downwards, and the internal tuberosity of the scaphoides is found beneath the internal maleolus. In addition, the points of the toes with the foot are usually thrown transversely inwards, or inwards and backwards and upwards, the plantar surface backwards and upwards, its inner margin presents upwards, and sometimes *forwards and upwards*, and as already indicated the outer margin downwards or downwards and backwards. The muscles with their corresponding tendons ordinarily found *contracted* and concerned in maintaining this deformity, are, the gastrocnemius, soleus and plantaris *mainly*, sometimes the tibialis posticus and anticus are involved, the latter becoming in some degree an *extensor*, and *adductor* of the foot. The flexor propius pollicis, flexors brevae, longus and communis together with the fascia plantaris may or may not be seriously implicated. The peronæi, as might be supposed, are unduly stretched and elongated.

The second species, (K. valga.) of which the specimen above spoken of is an *extreme* example, is much the least common of the three varieties and is *rarely* met with. When seen the posture of the foot will be found, as described already, with the points of the toes directed outwards, outwards and backwards, or backwards and downwards, the in-

ner margin of the foot downwards, or downwards and forwards, the outer margin directed backward or backward and upward—the calcaneum sometimes not at all, generally, we believe, *less* elevated than in the first species. The ossa cuneiformi and metatarsal range experience the same description of rotation as in the first species, but in an opposite direction; the plantar face of the foot, which presents backward and outward, is very *concave* and filled with deep depressions or sulci—the dorsal face is correspondingly *convex*, the internal margin is apparently shortened and offers a considerable concavity, whilst its external border is correspondingly convex and elongated—the great toe is *peculiarly* projecting, and drawn upward and outward, at the same time that the remaining toes are often turned in an opposite direction.

The principal muscles constituting the calf the leg are not as much contracted in this as in the first species described; whilst the *peronæi*, tibialis posticus, flexor propius pollicis, flexor brevis and longus are found extremely tense, contracted, and shortened. The flexors appropriated to the small toe and the one next to it, in the specimen alluded to, are so powerfully contracted as to have *articulating surfaces* at the metatarso-phalangeal articulations, and draw the points of these toes directly toward the external maleolus, whereby their phalanges are reversed, and applied upon their corresponding metatarsal bones. The *elongated* tendons in this deformity are, the tibialis anticus, extensor proprius, and extensor communis digitorum pedis.

I have not had occasion to remark the existence of *anchylosed* club foot—nevertheless we are informed by pathologists that in very ancient cases, the bones lose their natural form, and even become partially or completely *anchylosed*.

In the third species (equina) the heel is forcibly drawn up,

and maintained *permanently* in that position by the contracted condition of the gastrocnemius, soleus &c.; the dorsum of the foot forms a very *open* angle with the leg, its plantar face very concave, the weight of the body is received upon the heads of the metatarsal bones, which form a right angle with the toes.

It only remains to be stated on this branch of our subject, that nature, ever true to herself, establishes in every species and variety of Kyllopodia in which the *individual has walked*, such changes in the epidermis, skin, and sub-cutaneous cellular tissue corresponding with those surfaces which receive the weight of the body in progression, as in effect to constitute a new plantar surface or sole of the foot, whilst the proper plantar surface possesses much of the softness, pliancy, and delicacy of structure found in the cutaneous covering of the dorsum of the foot in its normal position.

The treatment of Kyllopodia, before as well as since its pathology was in some degree rightly estimated, until very recently was attempted by machinery alone. Whilst these measures have been attended with only very partial success, even after the most protracted and *painful* employment of them,—the fact must not be concealed that occasional cures have followed their use in early periods of life, before the muscles and tendons had acquired their adult development and rigidity. Most cases, however, have been either abandoned altogether, or at most the *club-foot boot* has been applied, the ordinary effect of which has been only to harass and irritate the patient.

These unsatisfactory results led surgeons to conceive the division of the tendons as a means of *facilitating* the correction of these deformities,—and although this operation was first performed upon the living human subject by Loreny, as

early as 1784, yet we feel confident that the facts which led him to its *deduction and execution* were known and *recorded* as early at lest as 1769.

The following extracts and translations, from the compilations of M. Paul will place this latter fact beyond the reach of cavil or doubt.

In discussing the subject of wounds of the Tendo Achilles, the writer says:—

"The opinions of the most distinguished authors on Surgery are very much divided, respecting the course to be pursued, when the tendo achilles has been divided by a cutting instrument, or otherwise. Some of these, among whom is M. de la Faye content themselves with an *approximation* of the ends of the divided tendon, and thus maintaining them by posture and the bandage, *without suture*—the majority however advise the latter. M. Heister thinks with de la F. that posture and the bandage, should be employed when these are sufficient to maintain the extremities of the divided tendon in *contact*, but that the *suture* is sometimes *indispensable* for this purpose. *

"M. Molhinelli has given us in the history of the Academy of Bologne (Commentarie Acadamie Scientiari Bononiensi Tom. 2 Par. 1 pp. 189, 196) the details of some cases which throw much light upon this matter, and perhaps settle the question." †

The cases are four in number, in all of which the tendo achilles had been partially or completely divided by accident; in all of them, M. M. removed *sections* of greater or less extent of the extremities of the *gangrened* tendons, in all, the lost substance of the tendon was *re-produced*, and the function of the extremity restored, in periods varying from

* Memoirs, 28th Article, intended to serve as a history of Surgery in the 18th century, and as a suppliment, to 3d volume of the Institutes of Surgery of M. Laurent Heister. By Dr. Paul, 1773. L. Histoire de l'Acadamie de Bologne Tom. 2. Par. 1.

† See Institutions de Chirurgie Par. 2. Sec. 6, Chap. on Suture of the Tendons.

six weeks to three months. These casese are interesting in several points of view, as they prove conclusively the re-production of lost tendon; and, as they are reported in a very succinct manner, we shall extract them without abridgement.

"*Case* 1. A man, aged 48 years, of bad constitution, living in a marshy district, received a wound which divided the tendo achilles of one leg in *nearly half of its thickness.* Some days elapsed before he was brought to the hospital, when the leg was found already tumid, particularly the calf. The inferior margin of the wound had assumed a livid green color, and upon pressure of it a similar colored sanies issued from every part. By the stilet M. Mollinelli discovered a sinus of rather large size, extending nearly to the middle of the calf of the leg, and found a portion of the tendon separated from the integuments inferiorly and laterally. For the purpose of exposing that part of the tendon, the wound was dilated in every direction, when the tendon was found larger and harder than natural, and unfortunately it was found to be gangrenous to the extent of two fingers breadth in length. After vainly attempting to restore the gangrened portion, there remained no other alternative but its extirpation with the knife—the operation for which was dauntlessly sustained by the patient. During this operation the thickened margins of the wound were likewise removed. Soothing and anodyne applications were made to the wound, care being taken not to tighten the bandages beyond what was essential to maintain the dressings, the patient never suffering unless they were tightened beyond this necessity. Succeeding to this, venesection was had recourse to several times, when the leg and wound began to assume a better appearance and condition, nevertheless some uneasiness was constantly experienced in the lower extremity of the divided tendon, which continued tumid and elevated slightly above the adjacent integuments and, to increase the evil, became *gangrenous.* All the remedies had recourse to, proving abortive, there remained no other alternative than the iron or the knife. The proximity of the heel, being not more than a finger's breadth distant, precluded the first, and M. M. not wishing to abandon the patient to his apparently hopeless condition, boldly removed the gangrened portion the *second time.* The same treatment as before was continued, the most perfect rest of the limb being enjoined. The wound

was besides dressed with suppuratives. By this course of treatment, the tumefaction gradually abated, and in two and a half months the wound was cicatrized. The space left by the loss of tendon was filled with a fungous growth, which was manifest after the cicatrization was complete by an elevation at the original seat of injury. The foot having been kept for a long period in *extension*, it was apprehended that this position would continue after cicatrization of the wound, and thereby entail lameness upon the patient for life. The result, however, was more favorable than anticipated, for although some difficulty was experienced in applying the heel to the ground when the patient began to walk, this inconvenience very speedily ceased and finally *he walked with the same facility as before the accident.*

"*Case* 2, Was that of a young man, 24 years of age, who divided his tendo achilles with a scythe to the extent of about one third of its thickness. Pain with violent fever succeeded, when M. M. did not hesitate to make the partial tendinous section *complete*, and opened a sinus besides, which had formed beneath the integuments. The superior extremity withdrew to a small extent upon division; the dressings employed were light and in a short time recovery was *complete.*

"*Case* 3, Is that of a man aged 32 years, who received a very severe wound of the achilles tendon, almost completely severing it transversely. The tendon of the plantaris muscle was so much relaxed as to project from the wound—the projecting tendon was *removed*, and the margins of the wound opened. Extensive abscesses formed beneath the integuments extending to the malleoli which were opened. By the use of retentive bandages, in about two and a half months, this individual recovered the *perfect use* of the injured extremity, and no other effect of the accident remained but an elevation or knot over the site of injury.

"The 4th and last case of M. Mollinelli, was that of a young man of uncommon size, and muscular development, who completely divided his tendo achilles about two fingers breadth from the heel. The accident was disregarded for several days. The superior extremity of the divided tendon had retracted beneath the integuments—the lower extremity was hard and tumefied, especially its wounded surface. Efforts were made to overcome the necessity of using the knife, but these were thwarted by the obstinacy of the disease. Tumefaction and induration daily increased, sinuses formed, some of which broke, hemorrhage ensued from the wound. In this extremity M. M. opened the sinuses over the tendon,

and amputated its tumefied and indurated extremity. The disease persisting, the inferior end of the tendon began to swell—this did not attain the size of the first, but its persistence required its amputation, when not more than two lines of tendon remained attached to the calcis. Succeeding the last operation a new aspect presented, and in a short time the wound closed by granulations. The patient would permit no other dressings than a simple retentive bandage, nor would he allow flexion or extension of the foot. From his obstinacy, the os calcis was found considerably drawn upward by the time he commenced walking, so as to prevent the foot *being placed flat upon the floor*—nevertheless, the recovery was so perfect that it was with difficulty that any difference in the functions of the two members could be perceived—the injured member admitting of every variety of motion."

The commentator, M. Paul, makes the following just reflections. "We perceive by the observations of M. Mollinelli, as well as by a single case of Gaingeot, that it is not necessary in order to insure union of the divided tendo achilles, to *approximate the extremities,* either by posture and the bandage, or by the suture, as had been previously practiced. Besides, in the observations presented, the *loss of substance was such* that no means could possibly effect it.

"These important observations had not been cited by any preceding writer on surgery, and it is surprising that they should be unknown to so learned an author as M. Heister."

In the January number of the Journal of Medicine of Dijon, for 1769, (pp. 56, 78,) *M. Hoin,* a member of the Academy of Medicine and Surgery of that city, wherein he resided, reported a number of experiments confirmatory of the observations of M. Mollinelli. He divided the tendo achilles of cats and dogs, partially and completely, and although *abandoned without special treatment,* they invariably recovered. The exclusion of atmospheric air from wounds was regarded as indispensable to safety and success, by many of the older

surgeons, but this precaution as stated was not observed in the above experiments.

These observations and experiments undoubtedly led to the suggestion of Tenotomy, or the division of tendons, as a surgical operation, which, as far as the records of the art inform us, was first performed by *Lorenz*, of Frankfort, who has been already spoken of. He practiced a section of the tendo achilles in the case of a young woman, aged 17 years, the 26th March, 1794, by making a *complete division of all the soft parts* embracing the tendon, from its anterior limits posteriorly. This allowed of an immediate descent of the os calcis, to the extent of *two inches.* A bandage maintained it in that position, and in six weeks the wound was closed. This observation was published by Thelenius in 1789.

In the year 1811, Dr. Michaelis, of *Marbourg*, divided the tendons in three cases of K. equina and one of K. vara—in the latter the tendon of the *tibialis anticus* was *alone* divided. He assures us that the first three cases were restored in a month.

Sartorius, of the Duchy of Nassau, in 1812 proposed and executed another method of operating. He made a longitudinal incision along the side, and parallel with the tendo achilles, opened its theca to the extent of admitting a grooved director, upon which a section of the tendon was made with a straight bistoury.

The individual, he assures us, upon whom this operation was performed walked upon the back or top of the foot;—the foot was flexed immediately after the operation and by maintaining it thus the cure was nearly radical.

Delpech was the first to propose a division of the tendon *without dividing the skin* covering it. The 9th May, 1816, he operated upon a child 6 years of age, by transfixing the leg in front of the tendon with a sharp pointed bistoury, in-

cising the skin to the extent of an inch on each side, and then dividing the tendon with a *convex* knife, without further division of the integuments. Delpech favored *union of the divided* tendon, by maintaining the foot in *extension for twenty-eight days*, when he supposed this result had taken place. Then *gradual* flexion of the foot upon the leg was effected, with a view of *elongating* the newly formed medium, uniting the cut extremities of the tendon. The flexion was painful, but in 8 days the foot was brought to its normal position. This operation was followed by high *inflammatory irritation*, and the wound at the expiration of three months had *not closed*, whilst some obliquity of the foot existed. Twenty years after this operation, the subject of it who was (and probably is yet,) living, was examined by *M. Bouviel*, of Paris, and reported to the Royal Academy of Medicine. He mentions the gratifying fact that there remained at the time his examination was made, only a slight deviation or lameness, not sufficient to prevent the individual from making long walks free from fatigue.

This partial success of Delpech did not encourage him to operate again, nor had he any imitators until 1833 '4, when *Stromeyer*, of Hanover, published six new cases of tenotomy after the *manner* of Delpech modified.

This modification consisted in passing a convex, sharp pointed knife in *front* of the tendon, (thereby endangering, we believe, a wound of the posterior tibial vessels and nerves) allowing the point barely to issue through the integuments on the opposite side—when the operation was completed without enlarging the cutaneous punctures.

He flexed the foot at the expiration of ten days in adult cases, and five for children,—in this particular at least, imitating the practice of Delpech.

The operation and treatment *failed* in the case of a child,

in which eight days were allowed to elapse after the operation, before flexion &c. was commenced.

Five out of the six cases were cured, four of which were K. vara and two K. equina. The youngest was aged seven years, the eldest 32. Mechanical means alone had been used unsuccessfully in two of these cases: third case apparently cured by the same treatment, suffered a *relapse*. In one case the operation of tenotomy was preceded by the use of mechanical means, in the other five tenotomy was first performed.

In one case section of the tendo achilles was preceded by a section of the tendon of the great toe—in another it was succeeded by a similar operation upon that of the extensor proprius pollicis pedis.

The duration of treatment was a month in the two first cases, five weeks for the third, six weeks for the fourth, and two months for the fifth case.

We are indebted for most of the facts in the brief history of the different manuals of tenotomy, which had been practiced prior to the year 1835, detailed in the last few pages, to the report of M. M. Blandin, Emery, and Velpeau, made to the Royal Academy of Medicine of Paris, upon "a memoir on the treatment of Club-foot by a section of the tendo achilles. By M. Bouvier."

From this report, a copy of which was presented to me by M. Bouvier, (through whose courtesy I had the opportunity of visiting his private orthopedic establishment,) I will in further illustration of this, and some other matters appertaining to this branch of our subject, add a few extracts and translations.

"Shortly after the publication of Stromeyer's cases, and in the month of February, 1835, M. Bouvier, assisted by the younger Berard, intended operating for club-foot, but for the unfortunate death of the patient from acute disease. To-

ward the conclusion of that year Bouvier and Duval performed tenotomy almost simultaneously in Paris."

As it is believed that Bouvier (whose manual for tenotomy we witnessed as practiced by himself at the Hotel Dieu of Paris,) has made some important and practical modifications in this particular, we will first, for the benefit of those who may determine to execute the operation, make the following literal translation.

"Bouvier has suppressed one of the openings and never makes but *one* cutaneous incision in executing tenotomy; he gives to the blade of his bistoury a remarkable degree of narrowness and delicacy; he also takes the precaution to avoid detaching and separating the cellular substance surrounding the tendon—as well as to preserve, as far as possible, the integrity of its cellular sheath, believing this to have an important part to perform in the process of reparation; he gives the least possible pain consequently; opens few vessels, thereby avoiding ecchymosis, a constant attendant upon the operation as before practiced, which again circumscribes inflammatory action in the progress of re-union within very narrow limits. Finally, flexion of the foot is commenced *immediately* after the operation by the application of appariel for this particular object, avoiding the excitation of pain or uneasiness in the seat of operation.

"In operating, the patient lies in the recumbent position upon the breast and abdomen, the feet and legs projecting over the side of a bed or table, the foot supported by an aid, who, by exerting some flexion upon it, renders the tendo achilles somewhat tense. Then with the point of a thumb lancet or common bistoury, an incision of very limited extent is made through the integuments upon the side of the tendon, and in a longitudinal direction opposite its greatest prominence. Through the incision thus made, a narrow, convex, probe pointed bistoury is introduced, with which a passage is easily made, by separating the cellular substance, without endangering a puncture of the skin on the opposite side, a section of the tendon is made as in the procedure of Stromeyer.

"After practicing the operation as described four times with the greatest success, M. B. employed in a fifth operation another procedure, which consisted in the use of a narrow,

blunt pointed *concave* bistoury, introduced through the cutaneous incision made as before, the instrument is then carried between the skin and the *posterior* face of the tendon, the latter is then divided from behind forward, giving to the wound a longitudinal direction. M. B. calls his instrument a *tenotome*, which from the thinness of its blade leaves but a very slight trace of its passage. A straight, sharp pointed bistoury may be made equally to subserve the purpose in executing the entire operation as described.

"One of the members of this commission, who invited M. Bouvier to practice this operation in the service with which he is charged, testifies to his ability and the excellency of his procedure, by which in eighteen days he succeeded in giving free use to the member of a man who had been deprived of it for 25 years.

"Delpech and Stromeyer allowed a certain period to elapse, when they supposed that the substance which serves as the medium of union between the ends of the divided tendon, had acquired a certain degree of consistence before attempting to restore the normal position of the foot. M. Bouvier, as already indicated, commenced the restoration of the foot *immediately* after the tendon had been divided, by applying an appariel, which not only maintained the degree of flexion already attained, but tended to augment it—at the same time preventing the inward inclination of the foot.

"The predecessors of M. B. temporised, fearful that the divided tendon might not re-unite. This apprehension is without foundation, inasmuch as we have seen in the case reported by Thelenius, that despite the wound of the integuments, and the extensive wound resulting from the tendinous division, and the separation of its margins, it cicatrized rapidly, and the patient walked with considerable promptness. The same is true of the observation reported by Sartorius."

In further illustration and confirmation of the truth of this position, it is only necessary to study the cases already reported from M. Mollinelli where we have seen that extensive *sections* of the *sphacelated* tendon were removed, in a succession of cases, wherein the *lost* structure was completely restored, and likewise the muscular and tendinous function. From this we pass to a subject of no less moment to the practical orthopedist and, we may add, of interest to the speculative physiologist—we refer to the physiology or me-

chanism of re-union of divided and *retracted* tendons. This subject has not been over-looked or neglected by M. Bouvier, and his experiments, as far as I am informed, are the only *conclusive* essays on the subject. We will give our readers an opportunity of forming their own opinions, by adducing the following important extract.

"The mechanism of re-union has been also studied by M. Bouvier. On the second or third day after tendinous section had been made, he found the cellular theca or sheath of the tendon thickened and more consistent than natural, and opened only the side where the instrument had penetrated, embracing both extremities of the divided tendon. Its internal surface was ecchymosed, of a bright red tint, in contact with itself or with the tendinous extremities which offered like discoloration of their surfaces.

"By the ninth day the connection which they formed was already consolidated, and adherent to the ends of a grey colored substance without any appearance of fibres. The contracted canal was without an opening, its walls being in contact and generally empty. M. B. has found it partly filled with partially coagulated blood.

It is toward the twelfth or thirteenth day that the canal begins to be effaced, and by the eighteenth it forms a resisting cord of like volume with the original tendon, and adhering to its extremities. The canal has nearly disappeared by this date, the tissue being compact and slightly infiltrated with a serous fluid begins to offer a fibrous structure.

"The twenty-fourth day the intermediate substance is found analogous to fibrous tissue, smaller than the tendon itself, endowed with great strength of resistance and solidity, no traces left of the inflammatory action which produced it.

"Examined the thirty-fifth day this substance was found perfectly continuous with the tendon but distinguishable from it.

"About the seventy-sixth day it presented the same appearances as the tendon of *another animal*, but distinguishable from it, by possessing greater solidity.

"With these facts, M. B. considers it demonstrated, that the formation of *new* tendon is due to the surrounding cellular tissue, first converted into a canal with distinct contiguous walls, which undergoes a gradual transformation into a solid fibrous cord.

The causes which concur to this re-union are, on the one

hand, the natural adherence of the cellular tissue, from which the intermediate substance proceeds, with the external surface of the tendon—on the other hand the accidental adhesions of these fibres, with the ends of the divided tendon and the continuity which is thus established between these, and the tendinous fibres when they have *acquired* the *nature* of the latter."

The novelty of these conclusions respecting the mode of tendinous re-fomation cannot fail to engage the attention of the reader. If they should be established by subsequent experiments, they are decidedly subversive of the generally received doctrines of re-production of lost parts as applied to other organized animal structures. Nor can we subscribe hastily to this anti-Hunterian philosophy as applied to tendinous tissues without much limitation, especially as the facts of his experiments as detailed do not lead us to the same conclusions with our respected and learned author.

A case of some interest occurred several years ago in the Philadelphia Alms-house Infirmary, in the service of our learned and esteemed friend and late preceptor, Professor W. E. Horner, of the University of Pennsylvania, which reflects some additional light upon the subject of tendinous re-formation, and which may not be known to the profession. It will be found reported by Dr. H. in the Medical Recorder, or one of the early numbers of the "American Journal of the Medical Sciences."

The facts are briefly these—A case of rupture of the tendo achilles presented, and was treated after the ordinary surgery in such cases, viz.; by the employment of an appariel for maintaining extreme extension of the foot upon the leg. After waiting greatly beyond the usual period for solid *union* to take place, the ruptured tendon was found un-united, agreeably to the commonly received hypothethis on the sub-

ject. Under this embarrassing and apparently hopeless condition of the patient, Dr. H., doubtless influenced by the principles and practice first proposed and employed successfully by his venerable predecessor, the late Prof. Physick, in ununited osseous fracture, passed a seton between the ends of the retracted tendon. Continuing to act upon the same principles as in treatment of pseudo-arthrosis referred to, the seton was allowed to remain, until it was supposed that the requisite degree of inflammation was superinduced when it was withdrawn. After the lapse of some weeks, not exceeding two months, according to our recollection, the Doctor by preserving rest, extension of the foot, &c. of the limb had the happiness of witnessing the success of his operation, and the final restoration of his unfortunate patient. Query.—Was the cure in this case the result of mediate or immediate union of the ruptured tendon? We confess for ourselves, that, enlightened by the facts recorded by M. Mollinelli, as well as the circumstances which it seems to us must obtain in every case of divided tendo achilles, viz.; retraction and more or less *separation* of its extremities—we are decidedly inclined to the opinion already intimated, that original tendinous re-formation must take place in the process of reparation. It is also entirely inferable analogically, in the absence of closely observed and *noted facts* in reference to a decision of this important subject, that in no case of rupture of the tendo achilles is it possible to bring the ends of the retracted tendon into actual contact, and that the union must of necessity be *mediate*. It was this impression, doubtless, which induced Heister, De la Faye, and others of former times, to advise a suture of the tendon when divided, and it is even doubtful whether it could be accomplished *completely*, by as gross surgery as this would now be regarded. In every case

of section of the tendon, which I have executed, or seen performed, a *chasm* is *immediately* seen and felt between the ends, which nothing but *re-deposition* can efface completely. A fatiguing and painful extension of the foot, continued for weeks and months, is not called for, then, as is the common practice in rupture of the tendo achilles—and enlightened by the facts of science, as they now stand recorded, this practice must and will be modified.

To return. It is but justice to my friend, Prof. Horner, to mention that, in a recent conversation with him in Louisville respecting his case of seton of the tendo-achilles, he considers it to be one of the *incipient* steps, which led to the adoption of an operation which it is our present object to consider. Whether, after the history of the subject already given, my readers will be induced to adopt a similar conclusion or not, the case is alike honorable to him who must be regarded, as he has been entitled, the father of American surgery, and to the gentleman immediately concerned.

There yet remains another subject to be mentioned, which may be considered as bearing some relation to that under consideration; my allusion is to *myotomy*, or section of the muscles. Apt illustrations of this operation will be found in that for torti-collis or wry-neck, by a section of the sterno-mastoid muscle; sections of the levator palpebræ superioris, of the sphincter ani; to which may be added the practice now employed with some success in Europe, in the treatment of certain deviations of the spinal column, by sections of one or more of the long muscles of the back; and, we may add, divisions of the contracted palmar aponeurosis. But it seems to me that tenotomy, for the cure of club-foot, could not have been deduced from any of the operations practiced upon the muscles, without original facts and expe-

riments connected with the large tendons themselves. It would have been, in other words, reprehensible to attempt the cure of club-foot by a division of the tendo-achilles, without the most *indubitable evidence* that its function would not thereby have been destroyed, or even materially impaired; as such a result would have left the individual in an incomparably worse condition, than the most frightful deformity, with the capacity of tolerable locomotion. Again, original observations or experiments were indispensable, besides those referred to, because it is familiar to surgeons and pathologists, that muscular substance when lost, is not repaired by the redeposition of the same tissue; and that its function consequently must be partially, if not completely lost.

Of this fact I was skeptical until a few years since, whilst a resident and practitioner of the city of Lexington, when the following case presented.

I was summoned in haste, a short distance into the country, to see a man who was bleeding from an incised wound of the leg, inflicted accidently by a scythe in mowing. Before my arrival, he had been transferred from the meadow to the house. The plexus of flexor muscles which lie against the outer aspect of the tibia and between it and the fibula had been deeply divided by a transverse wound, near the middle of the leg. The hæmorrhage from some divided branches of the anterior tibial artery, although profuse at first, was of short duration and did not require a ligature. The flexor communis was apparently divided, whilst the tibialis anticus and flexor proprius were not entirely severed. The ends of the divided muscles had, moreover, retracted, leaving a sulcus which admitted the ends of two or three fingers. A roller was applied methodically from the toes upward, and another from above the knee joint downwards,

meeting at the wound with the design of approximating the retracted ends of the divided muscles as near as possible. As a farther means of fulfilling the same indication, the foot was maintained in extreme flexion. In a few days I learned that my patient had disregarded the injunctions of quietude, and had been upon his feet attempting to walk. The appareil was re-adjusted immediately, and several times afterwards necessarily, before the wound cicatrized, which took place in about 20 days. It is proper to state that it was impracticable by the most careful application of the rollers, &c. to completely obliterate the vacuity at the point of incision.

Some weeks after the wound healed I was informed that much suffering was experienced in every attempt to walk, and that more or less pain in the foot and lower part of the leg, was experienced at all times in the injured limb—with a request to visit him. Nothing remarkable at this time presenting in the appearance of the injured extremity, I was induced to attribute the remaining disability to a partial division of that plexus of the anterior tibial nerve found winding over the flexor communis, to be distributed upon the dorsum of the foot—and to conclude that his distress was neuralgic. No permanent benefit followed a prescription founded on this view of the case, and on examination it was found that a depression or gap existed in the original site of the injury, imparting through the skin a soft puffy sensation, and of sufficient magnitude to receive a finger, pressed longitudinally into it; the un-united condition of the divided muscular fibres was evident. Moreover, on every renewal of flexion of the foot, the injured muscles were found greatly at fault.

Early the ensuing autumn, several months after the accident, the disability continuing, the man was brought to town

and submitted to the following operation. A longitudinal incision was made over the centre of the depressible point, and the retracted ends of the muscles exposed. The vacuity beneath the integuments was *partially* filled with *cellular substance* of different density—mostly lax and soft. This constituted the only medium of connexion between the retracted muscular fibres, which were variously separated from half an inch to an inch. I then removed carefully this cellular deposit denuding the ends of the muscles. By the aid of adhesives, the roller, posture, &c. the ends of the muscles were approximated as much as possible—but notwithstanding the greater faithfulness of my patient, a very manifest depression was still perceptible, weeks after the wound had closed.

Some improvement in the function of the member resulted from this operation, but disability continued for months afterward and as long as I had any knowledge of the case.

We will recur once more to the report upon M. Bouvier's memoir, for the purpose of epitomizing the four cases which he had then treated, as well as to present his general deductions upon the entire subject. All these cases were accidental, or acquired. Three of them were treated by M. B.; the 4th by M. Roux.

"The subject of the first was a young woman, 14 years of age, who as a consequence of scrofulous abscesses, with numerous cicatrices situated upon the posterior part of the leg, had a very aggravated club-foot, of the third variety, (equina.) The operation performed was after the manual of Stromeyer, slightly modified by Bouvier, and in 24 days the foot was restored to a right angle with the leg. The cure was perfect in three and half months notwithstanding the patient was not entirely governable.

"The second case was that of a man, aged 46 years, who had an accidental club-foot, of the same species as the preceding, produced by the bite of a dog on the heel, at his sixth year. The section of the tendon was practiced the 12th of

February. In twenty-five days the foot was restored to a right angle with the leg, and notwithstanding the formation of a cicatrix upon the heel, the result of improper application of the appareil—the fortieth day he walked with facility. The accidental ulceration required repose for a month.

"The third operation was performed upon a young woman, who had been the subject of hemiplagia of the right side for four years. The abdominal member remained feeble and the foot in permanent extension, which was forced outward and flexed. The operation in this case was practiced by M. Bouvier's second manual, i. e. from the cutaneous aspect of the tendon. In eight days the foot was flexed beyond a right angle, and in a short time the foot could be applied with the sole in a natural position upon the floor and without deviation—but the weakness of the muscles rendered progression unsteady.

"The fourth case belonged to M. Roux. This skilful operater practiced a section of the tendo achilles upon a boy of twelve years, who had been the subject of the same variety of club-foot, since his second year. The 4th of August, 1836, the operation was performed, and the foot brought immediately to near a right angle. The twenty-first day, re-union was complete, from which time progression was easy. This operation was also executed after the second manual of Bouvier.

"The section of the tendo achilles is manifestly an improvement in the treatment of club-foot. The length of time occupied in its treatment by machinery, and the painfulness of the process will not admit of comparison with the brevity of treatment, &c. by a section of the tendo achilles."

M. Bouvier concludes his memoir with the five following propositions, which we consider just.

"1st. Section of the tendo-achilles promptly cures phalangeal club-foot at an age when machinery could exert but limited influence, and in cases hitherto reputed incurable.

"2d. The operation (after my own method,) is as easy in its execution, as it is safe in its results.

"3d. Cures thus obtained can be regarded as permanent, since the patient treated by Delpech twenty years before, enjoyed the complete success of the operation.

"4th. The mechanism of re-union conclusively demonstrates, that the *immediate* separation of the ends of the divided tendon is no obstacle to the re-production of a new tendon equally capable as the original one of supporting the ordinary efforts of the muscles.

"5th. Section of the tendo-achilles abridges the cure of

internal club-foot, when accompanied by a forcible retraction of the extensors of the foot, and allows us to expect a more perfect restoration than has been heretofore obtained by machinery alone."

From my earliest study of practical tenotomy in 1837, '38, during a professional visit to Europe, I became convinced, that if the principles upon which it is predicated, were correct, as I believed them to be, its application would not be confined to those tendons concerned in deformities of the foot alone, and determined to embrace the earliest opportunity for testing the correctness of this opinion. I am now happy to say that I have had no reason to modify this opinion, then formed, in any of its applications (some of which are novel,) which I have had an opportunity of making; and that I do now regard tenotomy as established upon fundamental, scientific principles, susceptible of application whereever permanent muscular and tendinous contractions are concerned in the production and maintenance of deformities.

What remains of this essay, will be appropriated to reports and remarks upon some of the cases of deformity in which I have been consulted, with the results of treatment by a section of the tendons, &c.

Case 1*st.* The first in order of treatment was that of the Rev. Dan'l S. Colgan, of Columbia, Ky.

As a consequence of an extensive burn of the fore-arm, hand, and fingers of one extremity, from accidentally falling into the fire in the absence of his nurse when a child of 18 months old, the fore finger was lost to within about two lines of its first phalangeal articulation, and the middle, ring, and little fingers permanently contracted to various extents. The middle finger was rather more than half flexed upon the hand, resembling a hook; the ring finger was even more flexed, chiefly bent at its first phalangeal articulation, whilst

its two last or distal phalanges were applied nearly flat upon the palmar aspect of the hand, between which and the fingers cutaneous connections existed to within two or three lines of its extremity. The little finger was so much distorted as to have suffered partial dislocation at all its articulations, and in the process of cicatrization so completely buried beneath the integuments of the hand as to elude observation, without a careful inspection. It was thought advisable not to interfere with it, particularly as it presented no actual deformity. The middle finger was first operated upon, the 11th February, 1839, in the presence of, and aided by, professional and other friends of Louisville.

A longitudinal incision of the integuments was first made to the extent of six or eight lines upon the palmar aspect of the finger between its first and second articulations. A small opening was then made through the theca of the flexor tendons, through which the delicate *tenotome* of Bouvier, already described, was introduced, and the sublimis and profundus tendons transversely divided. By very gradual extension, the finger was brought immediately to form a line with the hand, and was thus maintained by a roller and splint applied upon its dorsal surface. The margins of the external incision were approximated by adhesive strips and simple dressings applied. It is worthy of remark that partial *ligamentous* anchylosis at the first metacarpal joint offered considerable temporary resistance in extending the finger, after the principal cause was overcome.

By the 19th of the same month, the wound being nearly cicatrized, and the improved posture of the finger giving Mr. C. satisfaction, at his solicitation the ring finger was subjected to a somewhat similar operation and treatment. The extensive cutaneous adhesions described, first required division, to-

gether with the palmar aponeurosis appropriated to this finger. Tendinous section was then executed as in the first operation, and the finger extended and dressed in a similar manner. From the wide gap in the integuments, which necessarily presented when this finger was restored, cicatrization was not complete before the 22d of March, on which day the gentleman left for the country. At this time both members, subjected to treatment, were nearly in a line with the hand, which posture he was advised to preserve for some succeeding weeks.

It was particularly observed during the successive divisions of the skin, aponeurosis, and tendons, executed in the last operation, that the obstacle to extension was not overcome until the section of the tendons was completed.

From the nature and extent of the injury, thirty-five years before, producing deep and extensive cicatrices of the fore-arm, hand, and fingers, with *anchylosis* of the first phalangeal articulations, more than partial recovery of the *functions* of the fingers was not to be expected, nor was promised. Some months succeeding the treatment, however, I had an opportunity of inspecting them, when some power of flexion and extension was enjoyed—the middle finger could be brought in apposition with the thumb and thus made to subserve many valuable purposes. In addition to which Mr. C. was greatly gratified with the result, as he could now present his *fingers* with the hand and arm in the extended position, so essential in gesticulation.

Case 2d, Was that of a colored girl, Cornelia, aged about 10 years, belonging to Mrs. J., of this city. She was represented as being of healthy conformation at birth. This was preserved until she was about thirty months old, walking with the ordinary facility of children of that age, when she was

attacked with pains in her lower extremities. At the expiration of about three months these *pains* subsided, leaving *both* lower extremities extensively deformed, in such manner and degree that she has not been able to move in the erect posture since. Her general health has been good. This is the brief and imperfect history of the case obtained up to the month of April, 1839, when she was first submitted to particular examination.

The deformities were found to involve five principal articulations, i. e. she had double *Kyllopodia Equina*, inclining to *K. vara*, (the feet and toes tending inward,) both legs flexed upon the thighs to less than a right angle, and from a slight contraction of the tensor vagina femoris of the left side, the thigh was slightly flexed upon the pelvis.

By reference to the cut, (Fig. 1.) taken from a drawing which I made from a cast of the deformity of the *left* extremity, prior to the operation, a correct estimate may be formed of the *double* deformity of the foot, and at the knee joint, and of *both* limbs, with a very slight exception. The difference between the limbs was to be observed in the greater atrophy of the left, from which the cast was taken, in addltion to which the flexion of the leg was greatest in this limb, whilst the extension and curvation of the right foot was greater than the left. The resemblance of the deformities, however, in kind and degree in comparing the limbs was so great as to supercede the necessity of delineating both.

The trunk and upper extremities were developed greatly beyond one of her years—which doubtless is referable to the extraordinary exercise to which they were subjected in her method of progression in the *sitting* position. The arms were employed in moving, not unlike *crutches*, by successively placing them in front of the body, resting upon the palms of

the hands, and drawing the body after them. The weight of the trunk, &c. rested principally upon the *right* nates, thigh, and leg.

After this manner, the feet and legs drawn close beneath, and to the side of the *left* nates, she was enabled to perform a species of locomotion upon a plane surface, and to ascend and descend, at a slow progress, the stair way. After what has been stated, it will readily be perceived why the *left* limb generally was less developed than the right.

The 19th day of April, 1839, I performed tenotomy upon the right tendo achilles. I had on this occasion the presence and kind assistance of several professional friends of Louisville. The foot was easily flexed to some extent immediately after the operation, so that the deformity was reduced about one-half, the ends of the divided tendon were found separated six to eight lines, and by the fourteenth day the foot had been gradually brought, by the employment of an appareil devised for the case, to a right angle with the leg.

The slight incision of the integuments, but little greater than that of common venesection, adhered in twenty-four hours, and by the twenty-first day the chasm between the ends of the divided and retracted tendon was completely filled, leaving no sensible inequality.

The 11th of May just three weeks after the first operation, I executed a section of the tendon of the biceps flexor cruris of the same (right) limb.

By the seventh day after this operation the leg had been gradually extended to a straight line with the thigh, by an apparatus somewhat similar to that of Amesbury's for fractures. This appareil, devised for the occasion, maintained the foot simultaneousiy in a normal position with the leg. In about a month this was removed and some motion com-

menced at the knee and ankle joints. The capacity for complete flexion and extension of the leg upon the thigh was rapidly acquired, and appeared to be perfect in degree and force, after a month to six weeks daily exercise. During the application of the last apparatus, it was subsequently ascertained, the patient had from time to time clandestinely removed the foot from the shoe attached to the heel piece, by which the heel rested against the os calcis.

This is mentioned as a circumstance which should be scrupulously guarded against under like circumstances, inasmuch as soreness and ulceration are the almost certain consequences. This unpleasant effect resulted in the present instance, creating a delay of many weeks in the progress of the case.

In the months of July and August succeeding, the first exercise in the *erect* posture was commenced, by the aid of crutches. These essays were regarded as sufficiently flattering, notwithstanding the want of muscular power and remaining soreness complained of in the recently *ulcerated* surface. Exercise of the limb was now resumed in the *sitting posture*, and maintained daily, for several months with as much assiduity as could be attained, with a view of developing size, strength, &c. In this I was not disappointed, as its increase in bulk and strength was very noticeable, and by the month of November the patient again commenced exercise erect with less timidity and fatigue than before. Notwithstanding, a few minutes in the erect posture excited a great degree of muscular tremor and uneasiness in the limb generally.

The *contrast* in the size of the extremities increasing, the right continuing to augment in *length* as well as bulk, determined me to treat the left *immediately*, if for no other purpose than to favour its growth—its *prospective* aid in erect locomotion being all that was *then* anticipated.

The 3d December I made a section of the biceps flexor cruris on the one hand, and of the semi-tendinosus and membranosus on the other, at my private lecture room, aided by several professional friends, and in the presence of a number of medical students and other gentlemen.

In about twelve days from the date of this operation, the leg had been gradually extended in a line with the thigh, and thus maintained about two months before muscular motion was allowed. Circumstances progressing favourably, tenotomy upon the *left* tendo-achilles was performed the 20th January 1840. The eighteenth day succeeding this operation, by gradual movements of the apparatus every second day, the foot was brought slightly *within* a right angle. The modified appareil of Amesbury, with the foot piece, was now applied as before, fulfilling like indications. This was worn about two months, and tendinous re-formation being considered perfect, it was permanently withdrawn and the freest muscular motion allowed and encouraged. Attention was now particularly directed to the *right* extremity again, the main dependence for immediate *erect* locomotion.

It had continued to develope in the interval of treatment bestowed upon the left, and extension and flexion of the leg were considered *perfect* by several professional gentlemen who saw and examined it with me; notwithstanding, *soreness* and *pain* were complained of in the *tendo-achilles*, whenever she walked.

The unfortunate ulceration of the integuments covering the heel, had in fact caused some *contraction* of the tendon, and consequent extension of the foot *beyond* a *right* angle upon the leg.—This disability not improving by exercise up to the early part of April last, determined me to operate a *second* time upon the right tendo-achilles.

A *re-section* of this tendon was accordingly executed on the sixth day of April, and an apparatus immediately applied by which in a few days the foot was brought into *extreme* flexion upon the leg. Considering the *second* tendinous union as solid by the 1st of June, the patient commenced to walk again with her crutches, under very *improved* circumstances. By frequently repeated, daily exercise she was soon capacitated to walk about the house and yard, in considerable comfort, with increasing strength and assurance.

About the middle of the present month, (August,) I find my patient continues to improve in every respect, so much so, that she is capable of walking or standing upon her feet two hours or more uninterruptedly with but little fatigue. In addition, the left limb within the last few days has been brought into requisition, and aids materially in standing or progression, by resting upon the points of the toes—the heel of this limb not reaching the ground by about two inches and a half.

Her general health remains, as it has been, uniformly good. No inequalities in the the tendon operated upon exist, nor is there any perceptible want of the most perfect continuity and consolidation of structure at the points where tendinous sections were made. Of this I am fully convinced from a recent examination made in connection with my friend, Prof. Horner, who equally satisfied himself on this subject.

The delineation marked No. 2, of the accompanying cut, is from a drawing from nature which I made of one of the restored extremities, about two weeks since—it represents the present position of it, in an erect or standing attitude.

Remarks.—The multiplicity of deformities, complicating this case, and destroying erect locomotion for a period of nearly nine years—taken in connection with the success at-

tending the application of the principles of tenotomy to the tendons of the flexor *muscles of the legs*, renders it, so far as my observation and reading extend, *entirely unique*. It is, besides, well calculated to encourage us in subsequent applications of tenotomy in similar pathological conditions, in *whatever part located*. This leads me to allude to a highly important application of the same principle to the treatment of strabismus or squinting, by Prof. Dieffenbach, of Germany. This ingenious surgeon has divided the internal rectus muscle (or rather, tendon I conclude,) of the eye in internal strabismus, with success. Several similar cases have appeared in the "London Lancet,"* in which this operation has been successful in the hands of P. B. Lucas, Esq.

And we conclude that the same operation may be applied to the rectus externus, internal oblique, and tendons of other muscles of the eye, where these are found concerned in the production of abnormal direction of the axis of that organ.

The same pathological states will, no doubt, be found in the muscles and tendons of the thoracic extremity, besides the illustrations contained in the first cases which I treated.

This essay might be protracted, by considering certain subjects *indirectly* connected with tenotomy, but it has already equalled the limits contemplated in the outset.

Reference is more particularly had to the manuals, which I have found safest for executing tenotomy at the popliteal region—together with Wm. Bennet's details of his modications of Dieffenbach's operation upon the rectus internus oculi.

The most suitable age for treating congenital Kyllopodia, when this can be selected, as well as the whole subject of anchylosis, the correct diagnosis of which becomes so indispensa-

*London Lancet, May 2d, 1840. p. 188.

ble in the interpretation of deformity in certain cases, are not less intimately associated with our subject.

I have found it safest in operating at the ham to make the preliminary incision through the skin on the *inner side* of the centre of the flexor tendons, and to introduce the tenotome from *within outward*, so as to make the section of the tendons from *without inward*. This is founded upon the relations sustained between the popliteal nerves and the tendons. These nerves after descending to about the centre of the popliteal space, are found in the remainder of their course through this region, to lie almost in *contact* with the *inner aspect* of the flexor tendons. The section of the tendon being made from without inward, so soon as the section is complete, (evidenced by its sensible contraction,) the instrument should be withdrawn and the nerve is safe, whereas it is possible if passed first around the inner side of the tendon the accompanying nerve will be embraced.

This modification I have also made in operating upon the tendo-achilles with a similar view of avoiding a wound of the posterior tibial artery and nerve.

In only one instance have I declined operating for Kyllopodia from the tender *age* of the patient.

This was an interesting and vigorous child of *four months old*, brought by its parents from a distant state last year, which I advised to be brought back when it had attained its second year.

Doubtless tenotomy, so far as this alone is concerned, might be safely executed at a very early age, and when the torsion of the foot would offer the least obstacle to redress, but I should not feel inclined to impose the necessary restraints of the restoring appareil when the excitability of the nervous and vascular systems are known to be most exalted. From

the fifth to the eighteenth year, must be considered as a very favorable age for treating any of the varieties of Kyllopodia. In illustration of the third and last topic named, of collateral importance in *practical tenotomy*, I will only add the following instructive case, in which tenotomy was *unsuccessful.*

Mrs. M. at about forty years, as a consequence of acute articular rheumatism, three years before, of the right knee joint, had the leg permanently flexed upon the thigh, about one third—i. e. it formed a very open angle with the thigh. The leg could be *permanently* flexed, but did not admit of extension beyond the degree named, and consequently lameness existed. It was evident enough that partial anchylosis existed in the knee joint, but inasmuch as the flexor tendons of the leg were rendered tense, in efforts at complete extension of the leg, the degree of agency which these exerted in maintaining the abnormal posture could not *a priori* be decided. Besides, preliminary diagnostic essays were resorted to with the original apparatus of Amesbury for fractures, with *perceptible extension* of the leg, beyond what she could *voluntarily* accomplish.

Encouraged somewhat by these trials, and knowing the doubtful nature of the result, this lady solicited the operation of tenotomy.

This operation was accordingly executed about the middle of May, 1839, in which sections of the biceps flexor cruris, and of the semi-membranosus and semi-tendinosus were executed. The limited cutaneous incisions were brought together by adhesives and united without suppuration. The third day succeeding these operations the appareil named was re-applied and by slight and repeated movements in the rack of the machine, the limb was extended *beyond* what it had been in the preliminary treatment.

Nothing was gained after this time, as further effort at extension of the limb produced pain and soreness in the *joint*, and after a short time, all further treatment was abandoned.

Tendinous reformation was as speedy and perfect in this, as in the preceeding operations upon the tendons of the flexors of the leg, and in due time the power of flexing the limb was recovered.

From all the facts as well as the history of Tenotomy in our possession, we feel authorized in advancing the following conclusion, viz.; that there is no variety of Kyllopodia, or any of its *pathological congeners*, recent or old, congenital or acquired—uncomplicated with anchylosis—which is not remediable in a very large proportion of instances by the treatment which we have endeavored to elucidate, and that the most aggravated of these deformities, from age or otherwise, may in like manner be decidedly ameliorated.

August 24th, 1840.

ART. II.—*A Fourth Supplementary Catalogue of the Plants of Kentucky.* By C. W. SHORT, M. D., Professor of Materia Medica and Medical Botany in the Medical Institute of Louisville.

Having several years ago, published in the Transylvania Journal of Medicine, a catalogue of the phenogamous and filicoid plants, native to and naturalized in this state, so far as they had then been observed by me, I afterwards published, in three subsequent numbers of the same Journal, supplementary catalogues of other species, as they became known to me, either by personal observation, or the reports of others competent to determine them. I now offer a *fourth* supplement

to the preceding lists, embracing merely the names of, and a few remarks on, some other plants, which have occurred to my notice in different parts of Kentucky, since the publication of the last. Like the others, this list is arranged alphabetically, without reference to systematic classification.

Ampelopsis cordata, on the banks of the Ohio River.

Aspidium dilatatum.

Aspidium asplenoides.

Acerates angustifolia.

Arabis lyrata, found by Dr. Riddell among the knobs of Greenup county, Ky.

Aronia latifolia, from the same locality, detected by the same botanist.

Anthoxanthum odoratum, (Sweet-scented Vernal grass.) This grass, which imparts such delightful odor to new-mown hay, is becoming gradually naturalized in our meadows.

Adonis autumnalis, (Pheasant's eye.) A showy exotic flower, found in the barrens of Kentucky, where it was introduced from a neighbouring garden.

Allium striatum.

Arenaria serpyllifolia.

Angelica triquinata, barrens of Ky.

Angelica atropurpurea, borders of Rock-Castle River, and other mountainous situations.

Asclepias parviflora. This species, so common in the southern States, has only been observed by me in the wet lands bordering on Green River.

Azalea nudiflora. (Bush Honey-suckle.)

Bumelia tenax, on the rocky banks of Little River, a branch of the Cumberland.

Boltonia glastifolia, swamps around Louisville.

Cyperus filiculmis, Islands of the Ohio.

Cyperus erythrorizos, (Grass nut.) The tubers attached to the roots have very much the taste of the cocoa nut.

Cypripedium candidum, (small white lady-slipper.) This interesting species was first pointed out to me in the barrens of Christian county, by the Rev. Mr. Jones, of Hopkinsville, Kentucky.

Chrysanthemum leucanthemum, (Ox-eye daisy.) A troublesome weed in the Eastern States, which will soon be extensively introduced into the West.

Carex bromoides.

Convolvulus sepium, (Bind-weed.)

Convallaria stellata. I have met with this pretty species only on Corn Island, opposite to Louisville.

Clethra tomentosa. I know this plant, as a native of Kentucky, only through a solitary imperfect specimen gathered by my pupil, the late Dr. Clarendon Peck, among the hills of Licking River.

Desmodium strictum.

Eupatoreum rotundifolium.

Epilobium palustre.

Euchroma pallida, barrens of Kentucky; much less abundant than E. coccinea.

Gaura angustifolia.

Gerardia auriculata, wet lands in the barrens.

Hypericum Virginicum, knobs among the barrens.

Hypericum angulosum, " "

Hypericum nudiflorum, " "

Hieracium Kalmii. This plant, in common with many others, is reputed to possess curative properties in snake bites.

Itea Virginica. This pretty shrub was observed by me for the first time this spring, (1849) among the wet timbered lands bordering on Green River, near Rumsey.

Ilex Canadensis, wet lands of Henderson county.

Ilex prinoides, " " "

Juncus marginatus.

Jussieua grandiflora. This plant, to which so much interest attaches, in consequence of the publication of Dr. Cartwright, in the July number of this Journal, was observed by me in the spring of 1838, in a marsh of Henderson county, Kentucky, ten miles south of the Ohio River. It was rare; but its existence there proved its adaptation to the climate; and if the views lately promulgated as to its health-preserving influences be sustained, it would doubtless be desirable to propagate it extensively in malarious and miasmatic districts.

Lythrum alatum.

Liatris cylindracea.

Leavenworthia aurea.

Leavenworthia uniflora, *Torrey.* Cardamine uniflora, *Mich.* These two little plants occur in common on wet rocks among the barrens. The genus, separated by Torrey from Cardamine, has been very justly dedicated to Dr. Leavenworth, of the United States Army, who has done much towards the elucidation of the botany of Louisiana, Arkansas and Florida, whilst stationed at different posts of the South and West.

Mariscus ovularis.

Plantago pusilla. A diminutive species of plantain, frequent in the pastures of Christian county.

Peplis Americana, common in the poor lands and pastures of Muhlenburg county.

Phlox pilosa. This is distinct from the plant, published under the same name, in a previous catalogue. That is most probably P. aristata, and the present is undoubtedly the genuine P. pilosa of Michaux. It occurs in great abundance in early spring among the barrens; and is a very handsome, low species, with dark purple flowers.

Psoralea congesta,—a new species lately discovered by Dr. Clapp and Mr. Jones, of New Albany, on the Islands of the Ohio River, near that place.

Psoralea latifolia. In thickets among the barrens; rather rare.

Prenanthes Illinoensis, abundant in the barrens of Kentucky, as well as the prairies of Illinois.

Quercus triloba. Observed by Dr. Riddell on the knobs of Greenup county, Ky.

Quercus ilicifolia.

Salix petiolaris, } Two dwarf willows detected by Dr. Clapp
Salix longifolia, } on the Islands of the Ohio River.

Sagittaria lanceolata,

Sisymbrium palustre.

Salvia urticifolia, in the thin oak lands of the barrens.

Styllingia sylvatica, rare—barrens of Kentucky.

Stellaria graminea.

Smyrnium atropurpureum.

Sedum telephoides, first pointed out to us by Dr. Clapp, on the lime-stone cliffs above Utica, on the Indiana shore. It no doubt occurs also in similar situations, on the Kentucky side of the Ohio.

Trillium petiolatum. A species having considerable resemblance to the common T. sessile, but totally distinct; barrens of Ky.

Trichostema brachiata, barrens.

Tripsacum dactyloides, (Gama grass.) A luxuriant grass to which public attention was called a few years since, as an excellent article of provender; a character which further experience has proved it not to deserve. It occurs, as a native, among the grasses of the barrens; and has been introduced into different parts of the state.

Taxodium distichum, (Cypress tree.) This truly valuable timber tree is met with abundantly in the lakes and lagoons of all the counties bordering on the Ohio river, in the West of Kentucky; where the peculiar excrescences called "Cypress Knees" form obstacles in the way of crossing the water-courses.

Verbena spuria, roadsides in the barrens, in common with V. angustifolia.

Wistaria frutescens. A flowering pea-vine, now common in gardens and shrubberies; abundant on the banks of Little River in the West of Kentucky.

Xanthium spinosum. A pestiferous species of cockle-bur, which, it is to be feared, will become extensively naturalized. As yet, I have only met with it on the commons of Portland, below the falls of the Ohio.

Yucca filamentosa, (Adam's thread, Bear-grass, &c.) A showy and ornamental plant, frequent in gardens; and which I am informed by the Rev. Mr. Jones, of Hopkinsville, grows abundantly on the Cumberland mountains, in the S. E. corner of Kentucky. An opinion is entertained by some, that the stream which enters the Ohio River at Louisville, derives its its name from this plant, which is supposed to have once grown on its banks. This is most probably erroneous; and it is more likely that the name of the creek was taken from some of those rank and luxuriant grasses, so common in similar alluvions, as Panicum crus-galli, and others.

August, 1840.

REVIEWS.

(*Continued from the September number.*)

ART. III.—*Elements of Pathological Anatomy;* illustrated by numerous engravings. By SAMUEL D. GROSS, M. D. Boston: 1839.

THE notices of some of the first chapters this book contained in our last number were a part of the article published in the preceding, the limits of which did not permit an insertion of the whole. The division was made in the absence of the Reviewer, and the article appeared, therefore, without exordium or peroration. With this explanation we proceed to the analysis of other portions of this comprehensive work.

The 15th chapter treats of hydatids. We agree with our author when he affirms, that most American physicians are unacquainted with this subject. It is but justice, however, to add, that, curious and interesting in a physiological and zoological point of view, as these productions may be, their study by the practical physician, is not of very great importance. This results, first from the rarity of hydatids in the *human* body; and second, from the impossibility in most cases of relieving the patient, when they are known to exist. Nevertheless, every physician ought to have a general knowledge of this class of beings; and such a knowledge can be successfully acquired in a single hour by the study of the dozen pages which our author has devoted to them.

"Hydatids occur in serous cavities, the alimentary canal and the passages which open into it, the cellular tissue, between the muscles, and in the proper substance of the different organs. Nevertheless, there are, as will be seen hereafter, some parts that are more frequently affected than others. They have been found in nearly all classes of animals,—in birds, reptiles, and fishes, as well as in a great many of the mammalia. Whether they exist in insects, is a point which has not been ascertained. No period of life is exempt from them. Portal, indeed, mentions an instance of their having been detected in the fœtus. They are most common, however, in adults and old people.

"So far as can be ascertained, these parasitic beings possess no genital organs, no apparatus for respiration, no trace of a circulation, and apparently no nerves. They can live and propagate their species only in the interior of other animals, and their existence is usually very brief, most of them perishing within the first year or two after they are developed, often much earlier. A few of them only are capable of performing distinct movements, under the influence of external stimulants. The cysticercus, for example, when put in luke-warm water, not only whirls itself about, but alternately protudes and retracts its suckers. The acephalocyst, on the contrary, remains perfectly quiescent, and may therefore be said to be void of irritability and contractility."

Hydatids are naturally divisible into two great classes—the cephalocysts, or those in which a head is associated with the cyst, and acephalocysts, or those in which there is no appearance of such an organ or any other. Of the former our author describes and figures four genera: 1st. The *cysticercus*, or bladder-tailed hydatid, of which he enumerates, with Cloquet, five species; most of which have been found but a single time in the human body, all of them in the plexus choroides and some of them there only. In our domestic animals, as the hog, sheep, ox, and goat, they are more common. 2d. The *polycephalus*, or many-headed hydatid, not yet found in man. 3d. The *diceras*, or two-headed hydatid, observed, once, to have been discharged from the human

bowels. 4th. The *echinococcus*, or rough hydatid, found a single time in the brain, and discharged once from the bladder.

From this enumeration it will be perceived, that the cephalocystic hydatids do not present themselves often enough in the human subject to be of much interest. Their greater frequency, in our domestic animals, constitutes them legitimate objects of epizootic medicine.

The other great class, *acephalocysts*, are much more common in the human body, and therefore more deserving of notice.

"Occurring both in the human subject and in many of the inferior animals, the individuals of this class of parasites infest some organs much more frequently than others. They seem to have a remarkable predilection for the liver, owing, probably, to some peculiarity of structure favoring their development. The brain, ovary, uterus, mammary gland, spleen, and kidney, are also sometimes their seat; in fact, they have been found in every part of the body, except the alimentary canal, the urinary bladder, and the respiratory passages.

"Varying in size between a mustard-seed and a large orange, they are generally of a spherical figure, and composed of a white, semi-opaque, pulpy vesicle, filled with a clear, limpid fluid. This vesicle, which forms the hydatid, properly so called, is from the sixth of a line to the eighth of an inch in thickness, and is often separable into two or more layers, and is so exceedingly delicate as to yield under the slightest pressure of the finger. So weak is it, indeed, that it is frequently incapable of withstanding the pressure of its own contents, as I have had repeated opportunities of witnessing, after the partial removal of the enclosing cyst. On being ruptured, it shrinks up into a soft, irregular, pulpy mass, of an opaline color, which readily swims in water, and bears the greatest resemblance to coagulated white of egg.

"It sometimes happens, though not very often, that a large acephalocyst contains several that are smaller, one within the other, all of the same shape and structure. As many as three, four, and even five, have been found thus enclosed, like so many pill-boxes. This arrangement, which occurs much oftener in the human subject than in the inferior animals, is

explained by the endogenous mode of generation previously adverted to, by which one acephalocyst, after having arrived at maturity, produces another, each successive one being smaller than its parent."

Our author like most of his predecessors indulges but little in speculations on the origin of hydatids; yet true to the theory, that most morbid products are the result of inflammatory action he strongly inclines to that view of their origin. In speaking of the causes which develope acephalocysts, he remarks:

"In Cincinnati, where there are annually slaughtered upwards of one hundred thousand hogs, probably not a tenth part are free from this disease. Whole droves, consisting of three or four hundred head, are sometimes thus affected. These animals, most of which are young, are raised in the prairie districts of Ohio, Indiana and Kentucky, and are literally stuffed, for six or eight weeks before being sent to market, with fresh corn. The consequence is, that the portal circle is kept in a state of constant congestion, which finally leads to inflammatory irritation and the development of acephalocysts in the liver and other viscera. The irritation thus set up is of a specific nature, and is followed by the deposition of a fibro-albuminous substance, or, what is the same thing, a sort of plastic lymph, the particles of which arrange themselves in such a manner as to create an inferior being, an entozoic parasite."

Undoubtedly, the great hydatid development in these cases is connected with an increase in the diet of the animal, originating a very active and nutritive process, particularly the adipous system; but we do not admit, that such a condition is necessarily attended with inflammation. In fact, we generally find, that individuals who generate great quantities of fat are less than others inclined to the *phlegmasiæ*, for the secretion of so much fat keeps down plethora. But if excess of nourishment generates hydatids by exciting inflammatory action, how does it happen, as we state in the words of our

author, that in many, ruminants, hydatids may be produced almost at pleasure, by confining them in moist situations, and restricting them to very juicy unripe vegetables? Is this a regimen, which is likely to raise inflammation? Under both modifications of diet we see causes which are calculated to affect the nutritive and secretory functions, and nothing more. If these causes excite inflammation, that state cannot explain the development of hydatids; inasmuch as there is no necessary connection, between the state of an inflammed part and the formation in it of an entozoa. If inflammation could give birth to hydatids, how does it happen, that we do not find them as frequently, as we find the acknowledged products of that pathological condition? Should an organ be at the same time affected with hydatids and inflammation, it would not follow that the latter was the cause of the former. It would be less gratuitous to affirm the reverse, and assign the hydatids as the cause of the inflammation. The origin of hydatids and all other entozoa, not known to exist out of the living body, presents us with a problem in transcendental physiology; but the remote causes which favor their development, are legitimate objects of study, and should be ascertained that they may be avoided.

Chapter xvi. treats of serous cysts. These productions bear a marked resemblance to the second great division of hydatids—the acephalocystic. They differ, however, from the latter, in being always attached to the adjoining normal tissues, which supply them with blood vessels. They are sometimes solitary and simple, that is consisting of a single cavity; at other times, this cavity is subdivided, by processes of the membrane which constitutes its parietes, and it then becomes multilocular; in which case the different cells may contain fluids very unlike each other, as serum, pus, blood,

fat, a honey like substance, &c. Finally, a great number of simple cysts may be aggregated in one cavity, attached directly to its parietes, or indirectly by being joined to each other.

"It will be recollected that these different classes of cysts are the result, in most instances, of an entirely new formation, dependent upon a perverted state of the nutritive function. In other cases, they appear to be formed out of pre-existing textures, sometimes of a serous, at other times of a mucous nature. To the former category belong the cysts, which are so often found in the ovaries, in consequence of the enlargement of the vesicles of De Graaf; to the latter, those which are developed in the kidneys and in the female breasts, from obstruction of the excretory duct. In these situations it is not uncommon for the adventitious growth to receive an accidental covering from the organ in which it is located. In the ovaries, for example, we accordingly find that the cyst is usually provided with very thick, dense parietes, separable into three distinct layers, the internal of which consists of the capsule of the vesicle of De Graaf, the second of the albugineous, and the third of the peritonæal coat of the organ. The same thing is sometimes observed in the spleen and liver. It is worthy of remark here, that, when the cyst is formed out of pre-existing mucous membrane, as in the instances above referred to, it generally, in the course of a short period, assumes all the properties of the serous textures."

These cysts may be regarded as secretory surfaces without excretory ducts, and hence the extraordinary dimensions to which many of them attain. By the stimulus of distension their growth is kept *pari passu* with the increase of the secreted fluid. We have seen an ovarian cyst come at last, to equal in capacity the gravid uterus at the full term of gestation. When the cyst has arrived at this magnitude, the patient exhibits all the characteristic symptoms of ascites. We have, at this time, two female patients, in each of whom an ovarian cyst has come to fill the cavity of the abdomen, with such uniformity and to such extent, that but for a refer-

ence to their early history their true anatomical history could not be known.

The study of serous cysts is interesting to the surgeon. When they are not natural cavities enlarged, but adventitious productions, they are, in all cases, manifestly allied to those semi-solid, atheromatous and steatomatous tumours, so often met with in the sub-cutaneous cellular tissue, and known under the name of wens. Even these, however, may be natural cellules, in a state of hypertrophy, reinforced in their parietes by new deposits of nutritive matter, or by the condensation of the surrounding cellular tissue. Thus an obstructed sebaceous follicle may, in the the opinion of Sir Astley Cooper, expand into an atheroma; and the fatty encysted tumours generally, may be nothing more than hypertrophied adipous vesicles.

With this subject, we conclude that part of the work before us, which treats of analogous and transformed tissues. The next chapter, divided into several sections, is devoted to the heterologous formations; the transition to which is easy and natural, inasmuch as the encysted tumours, are associated in our minds with those heterologous masses, which constitute some of the most interesting objects of surgery.

In our August No. we indulged in some speculations on the origin of these formations which we shall not now repeat. Professor Gross admits four species:—1. Tubercle, 2. Melanosis, 3. Scirrhus, 4. Encephaloid. We shall say enough under each of these heads to present the view which our author takes of them; but in the present number shall speak only

Of Tubercle. None of the heterologous formations are as frequent, as often seated in vital organs, and as fatal, as this; to which our author has, therefore, very properly devo-

ted more space than to either of the others. He remarks with great propriety, that although not stigmatized with the epithet *malignant*, this is, indeed, one of those productions, to which that term is most appropriate; as no other more certainly or speedily effects the decomposition of the surrounding parts. Tubercle has been found in almost every tissue of the body, but, as all the world knows, especially affects the lungs. There is reason to believe, indeed, that it is never found in any of the other tissues of the adult, without being likewise found in that organ; though it often exists there when it is absent from other parts. Of the causes of this pre-eminent liability of the pulmonary apparatus, we are entirely ignorant, and, therefore, at liberty to indulge in conjectures, which for a moment we shall do. *First.* The external causes which favor the development of tubercles, may be of a kind which exert themselves chiefly on that organ. Among these causes is a cold, damp and confined atmosphere, with sedentary habits—the former acting directly on the organ, the latter indirectly, by reducing the activity of the respiratory function. *Second.* The commencement of the tubercular development may be in the blood, or in the constitution at large, which may make an effort to eliminate the tubercular matter through the lungs, when it may be deposited in the cellular tissue or air vesicles of the organ. If foreign substances are thrown into the bloodvessels, some take the direction of one excretory outlet, others another. Thus, a solution of tartarized antimony brings on diarrhœa, nitrate of potash diuresis, and phosphorus in oil, an exhalation of phosphorous acid from the bronchial tubes. But we shall not insist on these speculations.

Tubercle is deposited at every period of life, from the fœtal state to old age; but the greatest liability is from the 20th to

the 40th year. In children the deposit is not so constantly in the lungs, as in adults; but has a greater disposition to affect the absorbent system and the spleen.

A great number of mammals, birds, reptiles and even insects, are subject to turbercles; impressively showing, that their causes are exceedingly pervading. Observation has rendered it probable, that in all these animals, the deposit is oftener made in the lungs than in any other part. Change to a colder climate, inactivity, confined air and innutritious diet, have appeared to be among the causes of this malady in animals. Their tubercles bear a close analogy to those of man.

The analysis of tubercle has thrown no light on its origin. Hecht of Strasburgh, found it composed of nearly equal parts of albumen, fibrin and gelatin. Thenard, on the other hand, obtained ninety-eight parts of albumen, out of a hundred. These differences may have arisen from the different stages or ages of the tubercular deposits, examined.

The most common form under which tubercular matter is deposited, is the miliary, or that which resembles millet seeds. These small bodies vary in density, from that of a semi-solid, to fibro-cartilage: and although generally of a dull yellowish colour, are sometimes gray, and at others of a milky blue.

At first perfectly distinct, the granules at length coalesce, and form large irregular masses. In general, tubercles have no other covering than the surrounding tissues: but now and then, we find them encysted. Examples of this, presented themselves in the lungs of phthisical subjects exhibited to the clinical students of the Louisville Hospital, last winter. The parietes of the cyst, none of which exceeded the size of a hazel nut, were dense, fibrous and closely adherent to the tissue in which they were embedded. Such tubercles bear a

striking resemblance to those in which the peritoneal envelope of the mesenteric gland constitutes the sac.

"This variety of tubercle is very rare. Louis has seen only a solitary instance; and Professor Carswell appears altogether to doubt the possibility of its occurrence. The celebrated Laennec also met with it only on a few occasions; and, thus far, although I have made numerous examinations of persons who have died of this malady, I have never seen more than five or six well marked examples of it. The situations in which it is most commonly found are the peritonæum, the lungs, the brain, the bronchial lymphatic ganglions, and the bones. According to Meckel, the encysted variety of tubercle is more frequent in the inferior animals, as the monkey, dog, and antelope, than in the human subject."

A third variety of tubercle is the infiltrated; a fourth the stratiform. All of these varieties are represented by our author in a lithograph; and his account of each, is as full as an elementary work requires. We must bear in mind, that these distinctions are not founded on a difference in composition of the tubercular matter, or of the mode of morbid action which leads to its deposit, but on the manner of its aggregation. We cannot, therefore, attach so much practical importance to their study as many writers claim for it.

As tubercles, (not softened into a puriform fluid,) are always found more or less indurated, it has, by some pathologists been affirmed, that they are hard at the moment of their secretion. Our author ably, and as we think, successfully combats this opinion, and shows that they harden by the absorption of their thinner parts. The following extract will be read with interest:

"In certain parts of the body, as, for example, in the peritonæum, we can detect nature, as it were, in the very act of her work, and distinctly examine this substance as it is about being converted from the fluid into the solid state. In several cases of chronic inflammation of this membrane, I have dis-

covered tubercles in every possible stage of development, some of them—evidently deposited only a day or two before the individual expired—being of a soft, viscid consistence, and perfectly transparent appearance; others semi-concrete yellowish, and consequently more or less opaque; and, lastly, another set perfectly dense and firm, like fibro-cartilage, organized, and covered by an accidental serous membrane, of the most delicate texture. Thus, the conclusion is obvious, that all tubercular matter, whatever may be its form, site, extent, is, in the first instance, of a liquid nature, and that it becomes solid only by the removal of the serosity which is always poured out simultaneously with it."

Our author has devoted a page to the nature of tubercles. We shall content ourselves with extracting its closing paragraph:

"After much reflection, however, upon the subject, and from careful and repeated examinations of tubercles in different organs of the body, in different individuals, and in different stages of their development and growth, I am constrained to believe that these heterologous formations are originally nothing but a species of coagulating lymph, thrown out as an effect of inflammatory irritation, and modified in its character according to the tissues in which it is deposited."

Having in the beginning of our review, given some reasons for dissenting from the class of pathologists, who like our author, believe in the inflammatory origin of tubercles, we shall offer no comments on his extract.

Professor Gross is an earnest advocate for the organizable constitution of tubercle. This, in fact, is but a corollary from his other proposition, that they are essentially the product of inflammatory action, and contain fibrin, the chief element of the false membranes. Not content with entrenching himself behind the authority of writers, he informs us that

"Within the last two years, I have examined not less than six specimens of organized tubercles, one occurring in the

kidney, two in the spleen, one in the peritonæum, and two in the lungs. They were taken mostly from children under twelve months of age. The tubercles were of the miliary kind, and numerous vessels, loaded with florid blood, could be seen shooting into them in every possible direction, many of them penetrating a considerable distance into their substance."

These observations would undoubtedly settle the question, if it could be shown, that these vessels did not belong to or run along the processes or lamellæ of cellular tissue, enveloped in tubercular matter. We can see no reason why such enveloping should not take place. In his Organic Remains, Parkinson has figured several flocculi, or filamentous textures remaining suspended in the menstruum with which he dissolved the calcareous matter, which composed the mass of certain marine petrifactions. This delicate, lamellated structure, he regarded as the cellular membrane, of the mollusca which after death had become petrified. The stony matter had taken the place of the more perishable parts of the animal, and the cellular tissue had become enveloped and perpetuated. May not the same thing sometimes happen, in the infiltration or deposit of tuberculous matter? It may be said, however, that the cellular membrane is devoid of blood vessels. But is this the fact? Is it not *traversed* by arterial ramifications? Moreover, is it not the seat of rapid and destructive inflammation? Does not arterial exhalation go on perpetually in its areolæ? And are not these facts indicative of a degree of vascularity, sufficient to account for the appearances observed by our author?

We do not, however, regard the question of the organizable property of tubercles, as offering any great practical interest. If they become organized it is but to die and dissolve. Their organization never makes them, like the false membranes, a permanent adjunct of our organs, and we do

not perceive, that in the treatment of tubercular diseases anything whatever turns upon the decision of the question. Our author admits that they do not always undergo organization; but he does not suggest any management specifically appropriate to the two conditions.

All the world knows, that tubercles soften and dissolve; that this in fact is the law of their existence, and that until this change takes place, or at least commences, they offer but little embarrassment to the organs in which they are deposited. On this process our author makes the following observations:

"But, whatever notions may be entertained concerning the origin and nature of these bodies,—whether we consider them with Wepfer, Broussais, and others, merely as diseased lymphatic ganglions, or with myself, as depositions of coagulating lymph, produced by inflammatory action, and susceptible, under certain circumstances and conditions of the system, of organization, they sooner or later become soft and fluid, the necessary consequence, it may be presumed, of their crude state. This process is supposed, by Louis and Laennec, always to begin in the centre of each mass; but Andral and Carswell maintain that it may commence at any part, indifferently, at the centre or at the circumference; and such, precisely, is the result of my own observations. As it progresses, the tubercular matter becomes daily more and more soft, moist, and unctuous, until at length it acquires the ropiness and fluidity of pus. When the degeneration involves the whole mass, it is usual to find two different kinds of matter in it; one thick, straw-colored, and inodorous, like laudable pus; the other thin, commonly tinged with blood, and mixed with small, opaque cheesy flakes. This is more particularly the case in scrofulous subjects, in whom the fluid in question often strongly resembles whey, with minute portions of curd floating in it.

"Conformably with the doctrine which it has been attempted here to enforce,—that tubercles are organized structures,—the process of softening may be supposed to be analogous to slow suppuration, by which the heterologous tissue is gradually broken up and destroyed. Let me be understood. After tubercles have existed for sometime in an organ, as, for ex-

ample, the lungs, they begin to act as extraneous bodies, producing irritation in the immediately circumjacent textures. This irritation, it may be presumed, is speedily propagated to the tubercles themselves; and, as their vital endowments are comparatively feeble, and consequently incapable of much resistance, they soon yield to the invasion, the rapidity of their softening being always in direct proportion to the violence of the exciting cause and the density of the morbid growth. Those, on the other hand, who believe that tubercles are organic, maintain that their softening is brought about by the agency of the surrounding tissues, alleging that they are incapable of undergoing such a change by any powers of their own. If this explanation were correct, the process should always begin at the periphery of these bodies, which however, as was before stated, is not the case.

"The softening takes place much more rapidly in some organs than in others, in which it does either not occur at all, or only after a long period. In the lungs, where the process has hitherto been chiefly studied, it may take place as early as the end of the first month from the time of the deposition, though generally not until much later. Upon this subject, however, it is obviously impossible to lay down any definite rule, as the production of the phenomenon in question must necessarily be influenced by a great variety of causes, such as the extent of the disease, the state of the patient's health, the density of the heterologous deposit, together with numerous other circumstances which will readily suggest themselves to the mind of the reader. Occasionally the softening goes on simultaneously over a large extent of surface, so as to break down one-third, a half, or two-thirds of an organ; but this occurrence is extremely rare, and is confined exclusively to acute cases. In the lungs, the degeneration usually begins at the summit of these organs, and gradually extends towards the base, as is shown by the fact, that if these viscera be examined in this direction, we successively find, at various heights, excavations and tubercles in different stages of softening,—the more solid being almost always lowest in the scale. Before the changes, of which we have now spoken, take place, the morbid deposit appears to create little disturbance in the general economy, and may exist, sometimes to a very considerable extent, without giving rise to symptoms indicative of its presence."

With this extended extract we shall for the present number close our analytical notices. The section on tubercles

running through nearly twenty pages, is replete with valuable information, and although we have questioned the soundness of some of its *speculations*, we feel it our duty in the strongest terms, to commend it to all our readers.

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We observe that the Journals of the United States, generally, have expressed a favourable opinion of Prof. Gross's work. But the American Journal, for August, presents its readers with an extended review, the drift of which, from beginning to end, is disparagement. The means of this disparagement are the selection and array of minute imperfections, and the omission of almost every notice which might be given of rich and ample excellencies. The readers of that review, were they to rely upon its statements, could not fail to regard the work as unworthy of a perusal. The Reviewer admits that its plan is good, but insinuates that its author is behind the times, and writes like one who had made up his work in the dissecting room, in the midst of subjects, with whose history he was unacquainted. Now we affirm as a fact, that the authorities cited by Prof. Gross far outnumber those of Andral; and that they are with adequate fulness brought down to the early part of the year 1839, when the manuscript was completed. We do not, of course, intimate that *all* the facts in pathological anatomy are given, for these would fill a library; but we say, that the object of the author—the production of an *elementary* treatise, on general and special pathological anatomy—has been most ably executed. The assertion, that he has not written like a practical man, is entirely gratuitous. We do not claim for our author the opportunities of personal observation, enjoyed by

Baillie, Andral or Louis, but we refer to the work itself, for evidences of a wide and diversified experience; not a little of which has been in hospitals, but much more in private practice, in a city of 40,000 inhabitants, in which, as we believe, *post mortem* examinations are oftener permitted—indeed proposed by the friends—than in any other city of the same population in the Union. In that place Prof. G. has not only had an extensive practice; but, as we have already stated, has for several years made inspections of the kind to which we are now referring, for nearly all his brethren.

The American Journal professes to be a National Review, and often breathes a patronizing spirit. It regards itself as the official of our ancient *Alma Mater*—the organ of the American profession—*the* Messenger of the New World to the Old! We certainly have no disposition to question these high pretensions—we even feel proud of its fame, and wish it long life and wide dominion. But the sun himself has spots, and the humble inhabitants of our earth can discover and note them as blemishes. They cannot tell what occasions the dark places; nor can we exactly divine the motive which has prompted the great censor of our medical literature, to aim at the destruction, in the first year of its existence, of the first extended and systematic work on a new and difficult branch of the profession, which our country has brought forth. Nevertheless as every effect has its cause, so every act of deliberate injustice has its object, and that which, on this occasion, justice requires us to condemn, will no doubt be revealed in due time. D.

(*To be continued.*)

Selections from American and Foreign Journals.

Fatal effects from acetate of lead given in large amount for Phthisis Pulmonalis. By Dr. Bicking, of Mulhouse.

Although we possess a large number of observations in which the acetate of lead has been given with success, or, at least, without serious accident, for phthisis pulmonalis, there are others in which troublesome results have followed from the prolonged use of this medicine, and, on this point, Dr. Bicking cites the following case:

Ferdinand R——, aged fifteen years, subject, during his younger days, to attacks of scrofula, suffered several times from affections of the chest, and finally became consumptive. Having arrived at an advanced stage of this affection of the lungs, accompanied with hectic fever, sweats, and colliquative diarrhœa, without any remedy having power to arrest or alleviate its course, Dr. Bicking commenced with the use of acetate of lead.

I gave, says he, to the patient, a quarter of a grain of acetate of lead reduced to powder, along with sugar of milk, four times a day, during a certain time. Under its influence I obtained a marked amendment in the course of the morbid symptoms; the fever, the sweats, the dejections, and cough diminished. The purulent expectoration likewise diminished without any increase of oppression; this advantageous result induced me to continue the treatment, and, during six weeks, I successively increased the dose of the medicine, so that at the end of this time the patient took two grains of the acetate of lead during the day.

At this period, the patient experienced a marked relief, troubled from time to time with some returns of the same general symptoms from which he had been relieved, and, at each

return, I employed, with success, the same means. In twelve weeks every trace of phthisis had disappeared, and the child who returned to school, was no longer subject to medical treatment. He had taken, in the course of the disease, nearly an hundred and thirty grains of acetate of lead, without any poisonous or even hurtful effect.

In the meantime, he could not regain entirely, his health; his strength declined, he became thin and pale, and his pulse frequent; frequent difficulty of respiration, pains in the chest, and an obstinate cough of irritation. I was apprehensive of an immediate renewal of the consumptive attacks. My fears were realized, but in another manner.

One month after the appetite gradually failed, the hypochondrium became affected with painful spasms; the stools were rare and painful; the skin over the whole body became blueish; the conntenance became puffed up and hot, the hair fell out; soon a convulsive cough supervened, accompanied by great difficulty of respiration, and burning pains in the chest, to which succeeded partial paralysis of the feet. This state remained fourteen days. One evening he experienced a violent access of fever, with heaviness of the head, paralysis of the eyelids, and convulsions in the face and extremities.

All remedies were unavailable; the patient remained insensible, in stupor or delirium; he died the third day after, but no autopsy was made.—C. W. *Hufeland's Journ. des Practs. Heilk.* 1839.

The publication of this notice should not, however, lead to the belief that the medicinal use of acetate of lead is always followed by fatal effects. We believe that it is necessary to study the therapeutic action of this acetate; we know that large quantities of this salt have been taken, in several cases, and we have seen Dr. Bricheteau treat, with pills of acetate of lead, Mademoiselle C—— S——, who was considered to be affected with consumption. This treatment was followed by great success, and the lady is now married, and has several children, and enjoys a good state of health. A. C.
Journ. de Chim. Med.

The above case is one of those rare occurrences in which a remedy, in many cases of great advantage, has been followed by lamentable consequences from its prolonged use. It may be advantageous to enquire to what cause such effects may be owing. In addition to the observations in the note of M. A Chevallier, it may be asked, may not this effect arise from the

formation of a carbonate of lead in the stomach of a patient whose digestive organs are much debilitated? Although pure neutral acetate of lead is not affected by free carbonic acid, nevertheless the acetate of the shops is always more or less affected by the presence of this gas, solutions always being cloudy when not made with distilled water. This is due to the loss of a portion of acetic acid, consequent on the exposure of the crystals to the air. This exposure is followed by an opacity of the external crystals by efflorescence, but that, in this instance, the result is not entirely owing to the loss of water of crystallization may be concluded from the strong smell of acetic acid which is exhaled by a jar of acetate of lead when recently unstopped. In this country, the acetate is commonly used in much larger doses than is here stated: a very common prescription, especially in dysentery, cholera morbus, &c., being two or three grains of acetate frequently repeated, and it is rare indeed to hear of any injurious effects therefrom. The custom, however here, is to unite, in the same prescription, a greater or lesser quantity of opium, as a means of obviating any injurious effects of the remedy, as well as to fulfil other indications in the above diseases. That it may have this tendency, will be obvious in considering the reactions which will be consequent on the mixture of these two ingredients. The meconic acid of the bimeconate of morphia would first neutralize any excess of oxide of lead in the acetate, and then the remainder would unite with more of the lead, and liberate acetic acid, thus forming an insoluble meconate of lead, which would pass through the intestines and be discharged. This remedy, however, is not employed to the same extent here in chronic cases, where a long continued use is required to produce its full effect, as it is in Germany. In this latter country it is very highly recommended in consumptive affections, and effects may result from its prolonged use, which would not appear from a greater amount of the remedy given in a much shorter time. R. B. *American Journal of Pharmacy.*

On the transformation of Calomel into Corrosive Sublimate. By M. MIALHE.

I HAVE the honor to communicate to the Society of Pharmacy, the summary of some experiments which I have made on the transformation of calomel into corrosive sublimate, experiments which I was suddenly forced to interrupt.

The point from which I started with my researches, was the following fact, reported by Vogel. A physician prescribed for a child twelve papers, each containing five grains of sal ammoniac, five grains of sugar, and half a grain of calomel: the child having died after taking several of the powders, the apothecary was accused of having committed an error in compounding the prescription. Luckily for our colleague, the accusation which hung over him was of short duration, Peter Koffer having quickly proven that, in presence of sal ammoniac and of water, calomel is partially changed into corrosive sublimate. This fact, of which I have ascertained the exactness, has always appeared to me very remarkable, and well worthy of fixing the attention of physicians and physiologists. It would not be so, if the assertion of one of the most distinguished professors of our school were founded in fact. This professor asserts to have proven, by means of experiment, that the chemical change of protochloride of mercury into deutochloride, does not take place under the circumstances stated by the German chemist. I shall not attempt to point out whence is the source of error into which our learned colleague has fallen; I shall at present content myself with publishing the conclusions which result from my experiments.

1. The protochloride of mercury, in presence of hydrochlorate of ammonia, or of the chlorides of sodium or potassium, and of pure distilled water, is changed partly into deutochloride of mercury, and into metallic mercury. This change takes place at the temperature of the human body, and even at common temperatures, and demands but few moments of contact to be effective. It is sufficient, for example, to be convinced of this fact, to allow calomel to remain a few minutes in the mouth; a mercurial taste, of sufficient intensity, will not be slow in exhibiting itself. This taste is the result of the mutual reaction of the chloride of mercury, and the alkaline chlorides in the saliva.

2. It is to the change of calomel into corrosive sublimate, and metallic mercury under the influence of sea-salt and the salts of ammonia, which we know to exist in the liquids of the alimentary canal, that we must attribute the pathological phenomena of mercurial salivation, from the administration of calomel. What proves that this is really the case, is, that when the protochloride of mercury does not purge, but is retained for a long time in the digestive tube, it excites an unusual secretion from the salivary glands, and this on account of the large quantity of corrosive sublimate which is produced.

The same phenomena happens after the long continued use of the protochloride of mercury, and from the same cause.

3. As the quantity of corrosive sublimate formed can only be proportional to the amount of alkaline chlorides which are contained in the viscera, those persons who eat large quantities of common salt, every thing else being equal, should be more susceptible than others, when under a mercurial course of medicine.

4. The antisyphilitic properties are communicated to it, either in whole or in part, by the sublimate and the mercury to which its chemical decomposition gives rise. It is, without doubt, the same as regards its anthelmintic virtues; it is by producing poisonous effects on the ascarides, by means of the two agents mentioned, that the mercurial chloride relieves us from these importunate guests.

5. All that has been said of the medicinal action of calomel may likewise be predicated of the prot-iodide of mercury, which, under the same circumstances, is converted into deut-iodide.—*Journ. de Pharm.—American Journal of Pharmacy.*

Emetics of Ipecacuan. in Hemorrhage.—Dr. Osborne states that this treatment in menorrhagia has never as yet failed in his hands, except when the progress of the case afterwards proved the formation of scirrhous or cancerous structures of the uterus. "The remarkable effects of emetics of ipecacuanha in restraining hemorrhage," he adds, "is not confined to this organ. In a case of violent epistaxis, in which several remedies were ineffectual, I tried it while preparations were going on for plugging the posterior nares, and with success, so as to render that measure unnecessary. In hemoptysis, I am unable to add the facts already known respecting its efficacy, being of opinion that hemorrhage from the lungs is always salutary, and that the practice of giving the mineral acids, &c., to discourage it in phthisis is injurious. A very considerable benefit is generally perceptible, after the vessels of the diseased lung have been unloaded by this discharge. When, however, a violent hemorrhage takes place from the lungs, and blood is expectorated in such quantities as to endanger life, then all our efforts must be directed to its suppression. In a late case (not phthisis) I failed in the emetic, but as I lost sight of the patient subsequently, I am unable to pronounce as to the cause of the hemorrhage, and therefore as to the cause of the failure."—*Dublin Journal of Medical Sciences.—Boston Med. and Surg. Jour.*

Cure of Strabismus.—M. Jules Guerin announces, in a letter recently addressed to the Academy of Sciences, that he has performed Dieffenbach's operation for the cure of strabismus in four cases with success.

I had long ago established, says M. Guerin, and publicly professed, that strabismus depends on retraction of the muscles of the eye, and its various forms depend on the different degrees of retraction, variously affecting the different muscles which move the eyeball. This is a simple application of my theory of the deformities of the joints in general, which elicited from a distinguished member of the Academy, the quaint, but just remark, that squinting was the club-foot of the eye. In accordance with this theory, I have proposed to extend to the eye the section of its muscles; the mode of operating which I have adopted, differs slightly from that of Dieffenbach; the results have been advantageous, but not immediately so: in one case only did the eye become quite straight soon after the operation; in others there was merely an amelioration, and this circumstance appears to me to be a natural consequence of the true origin of squinting.—*Journal des Debats. Ibid.*

Red Sulphur Springs.—I passed on without stopping long at any of the springs until I reached the Red Sulphur, which is the most distant of them. It is situated in the county of Munroe, seventeen miles from the Salt Sulphur, and of course forty-two miles from the White. The spring is concealed in a glen in the midst of hills, which surround it completely, forming, however, a narrow valley, the length of which is much greater than the breadth. These hills were at one time covered with high trees; but the proprietor of the spring, Mr. Burke, has cleared them away, from a well-grounded apprehension on the part of the invalids that they obstructed the circulation of the air, and rendered the place damp. The hills shelter the buildings and the whole inclosure from the cutting winds which are often felt in the springs near the Allegheny mountains; the climate therefore is extremely mild in the summer season, and subject only to one inconvenience—the damp fogs and occasional chillness in the evening; this is, however, readily guarded against by a little fire in the cabins. Most of the invalids avoid walking after sunset, or in the early part of the morning until the dew is cleared away.

The summer climate is therefore not unexceptionable; but is still vastly better for a pulmonary invalid than the excessive heat of the eastern plains, or the cold breezes of the seaside. In pulmonary cases, properly speaking, I have observed no inconvenience; but I have met with asthmatics who were injured quite seriously by a journey to the mountains, which was incautiously advised by their medical attendant. The sharp air and the alternations of temperature produce much greater effects upon them than on those who are disposed to tuberculous diseases.

The reputation of the Red Sulphur Springs is chiefly founded upon its efficacy in either alleviating or curing pulmonary diseases, including catarrhs of long standing, and commencing tuberculous cases. Even in patients who have long labored under the latter form of disease, the benefits of the spring have been much sought for. A reputation of this kind, which arose gradually, and was sustained for many years, notwithstanding many disadvantages of situation, and an almost absolute dearth of comfortable accommodations for the sick, which then existed, cannot be unfounded. It is true that an exaggerated estimate of the powers of the water, and a carelessness in the selection of patients who have been from time to time sent to the spring, have produced an impression which is unfavorable to its true value.

I met with a remarkable instance of this. On my return from the Red Sulphur, at the Salt Sulphur I found a young married lady who had just arrived from a long journey of sixteen days; during this whole period she had labored under a colliquative diarrhœa, and an exhausting hectic, with the thick yellow expectoration which indicates the rapid softening of tuberculous matter. I was then called to see her in consultation with a gentleman from the same part of the country in which she resided, and found her rapidly sinking; at our earnest request, the friends of the lady, who were utterly unconscious of her danger, consented to give up their intention of proceeding farther; she died the next day, and but for our interference, would have sunk in the course of the last day's journey. These extreme cases are not frequent, but there are many instances in which much mischief arises from advising patients in the last stage of pulmonary phthisis to resort to the Red Sulphur, precisely as in similar circumstances it is pernicious and morally wrong to direct them to abandon the comforts of home in the vain hope of seeking for health in a warmer climate. No patients who are exhausted by hectic fever, and copious purulent expecto-

ration proceeding from cavities, should be sent to a distant place; and a long journey should be still more sedulously avoided if there is much diarrhœa. The latter symptom is generally aggravated by the journey, and the patient is besides unable to take the Red Sulphur water in sufficient quantities to produce any sensible effects; for the quantity, rathan the quality of the water, tends to increase the discharge from the bowels. It is under certain circumstances desirable for invalids in the last stages of pulmonary disease to leave their accustomed air, and seek for a restoration of strength, if not an entire recovery; but these persons should seek a nearer retreat, and one exempt from the fatigues of a mountain journey.

The explanations which are given of the mode in which the water of the Red Sulphur Spring acts in relieving phthisis, do not seem to me to be well founded. It is thought that it has a direct power of diminishing the frequency of the pulse. It is true that this result does follow in a certain proportion of cases; but on a careful examination of many patients who took the water, I found that this effect did not occur at the beginning of many of the cases. It is true that when the irritation of the disease was to a certain extent subdued, the pulse became less frequent; but this did not appear to result from any peculiar action of the water. Its first action was that of a sedative, perhaps more nearly resembling minute doses of hydrocyanic acid than any thing else. It caused a tendency to sleep in nearly every patient, and in some gave rise to considerable headache, and a disagreeable sensation of fulness, which lasted for a few days. The water passed off by the kidneys, producing little effect on the bowels or the skin. It may, however, be readily determined to the surface by proper attention to warmth.

The quantity of water taken is very various; in former times it was much more freely drank than at present; invalids now rarely take more than eight tumblers, about three pints, in a day. But if the water does not produce a permanently disagreeable effect upon the alimentary canal, it may be properly taken in much larger doses, say from ten to twenty glasses of the kind usually employed at the spring. But while taking the water the invalid should take constant and regular exercise; this precaution is one always to be observed when using mineral waters, but certainly by no class of patients more faithfully than those disposed to phthisis. Yet simple and obvious as is this rule of hygiene, the patients have of late been singularly negligent in this matter, and

often limit their exercises to an occasional game at ninepins, and a quiet stroll about the grounds. The water should be taken in divided quantities before each meal, but especially before breakfast. Thus, if the allowance be eight glasses, three of them should be taken before breakfast, in the space of an hour or two; two before dinner, allowing the same period for it; one before supper, and two in the evening. But between every glass, as much exercise as practicable without producing fatigue, should be taken if the weather be fine. If the morning should be cool, it is proper either to exercise within doors, or in the piazzas, which, at the Red Sulphur, extend several hundred feet in length.

Much of the benefit of mineral water depends upon the facility with which it is absorbed, and, as it were diffused throughout the system: this diffusion is greatly promoted by vigorous exercise, which prevents the unpleasant sensation of a load or fulness at the stomach, that often occurs under different circumstances, Exercise is more necessary while taking a water like that of Red Sulphur, which contains but a very small proportion of saline matter, and depends for its action chiefly upon its gaseous elements, which are less readily determined towards a particular organ.

The red deposit which gives name to the spring is less copious this year than usual; in fact, it is scarcely a deposit; a portion of sulphur is combined with a peculiar organic substance, apparently some variety of the cryptogamous plants. The spring has been carefully cleared out, and the sides for the deposition of the plant may have been removed. Some of the old visiters to the spring fancy that the strength of its waters has been impaired by the copious rains of the summer, but this opinion does not obtain amongst others.

The action of the water is certainly that of a mild alterative, as well as sedative, and it is useful not merely in cases of commencing phthisis, but of many sub-acute inflammations of the mucous membranes. Indeed, in pulmonary disease the water is apparently most beneficial in the stages of the diseases in which there is a slight irritation, sufficient to cause some feverishness, but not to give rise to very acute symptoms. The acute forms of phthisis are usually aggravated by a residence at the Red Sulphur; at least this was my experience during the present summer; but this aggravation manifestly depends more on the irritation of the journey and peculiarities of climate, than on any action of the water. The therapeutic rule, that much exercise, or excitement of any kind, is injurious in acute phthisis, always holds good.

The disorders of the mucous membranes in which this water is the most useful, are chronic inflammations of the stomach and bowels, especially the varieties which are sub-acute from the beginning: when the case is one of chronic dysentery following the acute form of the disease, the good effects of the water seem to me more problematical; but of this I have no personal experience. In chronic irritation of the urinary passages a like good effect has often been noticed; I recommended it in cases of this kind, but was not able from my own experience to confirm the results which have been previously observed. In these diseases the water acts medicinally by its alterative virtues; in the functional diseases of the heart the action of the water is more complex, and is partly derived from its alterative, and partly from its sedative qualities. An interesting case of this kind occurred to me: a young gentleman, a student of the University of Virginia, was affected with a disease of the heart, chiefly symptomatic, and dependent upon nervous derangement and dyspepsia, but in part connected with a real enlargement of this organ. After remaining some time at the White Sulphur without benefit, he resorted to the Red Sulphur,—and after taking the waters for a few days with the usual precautions, his symptoms rapidly declined. A single case of this kind is of no value, but the general experience is decidly favorable to the effects of the water in this form of disease.

A mild mineral water like the Red Sulphur, which contains, it is believed, but little more active ingredients than sulphuretted hydrogen and nitrogen gas, must derive much of its virtue from the temperature and quantity of the water. The medicinal ingredients act probably quite as effectually by the direction which they give to the water, as by the remedial properties peculiar to themselves.—*Medical Examiner, Aug. 15th*, 1840.

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LANCASTER MEDICAL INSTITUTE.

We regard every association for professional improvement, as entitled to commendation. Under this feeling, we have already noticed two or three in the sister States of Kentucky and Ohio; and propose to make known to our readers, all with which we may happen to become acquainted. On a late visit to Lancaster, in the latter State, we had the pleasure of learning something of a society, composed of its respectable physicians, which is manifestly exerting a beneficial influence on the character of the profession in that place. We have prefixed its title to this article. Its President, is Dr. James White, Vice President, Dr. G. W. Boerstler, Secretary, Dr. M. Z. Kreider, and Treasurer, Dr. H. H. Waite.

The primary object of this Institute, is "the advancement of medical science *among its members.*" To this end, it holds semi-monthly meetings in November, December, January, February and March, and monthly meetings, during the remainder of the year. At each meeting, a topic is selected for discussion at the next. It is expected that all interesting clinical cases will be reported to

the Institute, and the members are furthermore invited to read essays, on the subjects they may investigate, either in medicine or the auxiliary sciences. At the end of his annual term of service it is the duty of the President to deliver a scientific discourse. All these productions are subjected to discussion. It is a further object to regulate the intercourse, and promote the harmony of its members: also to subscribe for Medical Journals.

Now, if the physicians of every country town in the Valley of the Mississippi, were thus to unite, it would unquestionably give an immediate impulse to the profession. They would all be made abler, happier, and more respectable. And why should they not thus unite? Why not resolve to apply their shoulders to the wheels of their profession, and in a spirit of noble emulation, give it a long push, a strong push and a push all together? This would certainly be preferable to the push-pin employments, in which so many of us push away the hours not devoted to the sick; and although, at first the new custom might make us feel a little awkward, it would soon grow into a habit, of which no one would be ashamed. D.

DOVER'S POWDER MODIFIED.

Dr. Townsend, of Wheeling, has sent to Dr. Drake a note, in which he recommends two new ingredients in the formula for this popular compound—nitrate of potash and the powdered root of the sanguinaria Canadensis. Many of our brethren in the West, have long been accustomed to substitute the former of these articles for the sulphate of potash, but have not dispensed with the Ipecacuanha. Here is the Doctor's recipe: Opium and the powdered root of the sanguinaria, each one grain, nitrate of potash eight grains, mixed intimately by trituration. This preparation he has used, instead of the officinal, since the year 1816. The following are his pharmaceutic and practical remarks concerning it:

"It is said in our Dispensatories that the only use of the sulphate of potash is, to reduce the opium to an impalpable powder by the hardness of its crystals. I dry the opium and then pulverize it until it all passes through a fine seive. This enables me to use the nitrate of potash, which is a diuretic salt of long established value, and always admissible when the Dover's powder is proper.

Instead of the ipecacuanha of the old preparation, I have substituted the pulverized root of the *sanguinaria canadensis*, which is as good a diaphoretic as the the ipecac., at the same time that it is an alterative of nearly as high powers as mercury. My Dover's powder, then, does not contain any thing in the old preparation but the opium.

"I am aware that many are opposed to every thing new. But let such look at the long list of diseases enumerated by Professor Tully, in which sanguinaria has been found highly beneficial as a deobstruent or alterative; and they may be enabled to appreciate its value as a substitute for ipecacuanha in the composition of Dover's powder; and instead of a useless innovation, they may find it to be a real improvement. There is now no question that, as a diaphoretic, for which Dover's powder is so frequently employed, the sanguinaria will do all that ipecacuanha is capable of doing. If, then, sanguinaria possesses other and valuable properties, not possessed by the ipecacuanha but calculated to fill the indications for which Dover's powder is usually prescribed, it must be obvious that it will render the new preparation a better article, and consequently deserving of the attention of the medical profession.

"I might, from the facts already known of the *modus operandi* of the sanguinaria, go on to show, theoretically, that this modification of the Dover's powder is calculated to make it a very superior article to the old preparation. But I am contented with using it in my own practice, and with giving this simple notice, that those of the profession who think proper may avail themselves of any advantage this preparation can afford. The sanguinaria is the growth and product of our own country. This alone is by no means an unimportant consideration, inasmuch as it will assist, as far as it goes, in rendering us independent of other and foreign countries for a necessary article." D.

TEMPORARY HEMIPLEGIA AND APHONIA, APPARENTLY FROM WORMS.

Dr. A. A. Patterson, of Franklin county Kentucky, in a letter to Dr. Drake, communicates the following case:

"September 6th, 1838, I was sent for in haste, by Mr. D. to visit his son, ten years old, whom I found totally paralytic in the right

side and unable to speak. Desiring to see his tongue, he was unable to protrude it, and I had actually to bring it forward with my fingers—it was coated with a white fur to its edges, which were preternaturally red. His pulse beat 115 strokes in a minute. The expression of his countenance was rather idiotic. During the day, before my arrival, he had vomited four or five lumbricoides.

"I immediately ordered an emetic, which caused the discharge of several additional worms, with some bile. I then administered a dose of calomel and jalap, eight grains each; and left two additional portions of the former medicine, each nine grains, to be exhibited at intervals of two hours.

"When I called the next day, my patient was able to walk about and speak. I prescribed a dose of castor oil; and when I saw him a few days afterwards, he was quite well." D.

PROGRESS OF THE TEMPERANCE REFORM.

Within the last six months, we have had ample opportunities of observing the present state of the temperance reform in the Valley of the Ohio—emphatically the heart of the West. Everywhere the friends of temperance appear to be languid, and, in most places, absolutely inert. This does not strike us as remarkable; for nothing is more difficult than to sustain an associated benevolent effort for a great length of time. All such efforts are essentially intermittent. We look for a revival at no distant day. Some new influence will arise, and reproduce the noble warfare of the past.—Meanwhile, we are enabled to say, that in almost every part of the West, that warfare, has been most effective. A careful inquiry of physicians, and intelligent observers of all classes, has convinced us, that the amount of drinking is far less than it was twelve years ago, when the first combinations against it were organized among us. Few or no families now take their morning bitters and, yet, the ague and fever is rather on the decrease than the increase; the practice of offering intoxicating drinks to visiters, has signally declined; the amount drunk at the tables of our taverns and steamboats, has diminished in an equal degree; labouring men take far less than they formerly did—a great number of farmers even give none in harvest time, and still find their operatives much more effi-

cient and enduring, than under the old regimen; at our Fourth of July celebrations, but little is drunk compared with what our fathers consumed on that national festival; the great political meetings of both parties have been characterized by temperance in drinking, whatever may have been the intemperance of their partisan feelings; finally a "drunken doctor" is becoming a phenomenon, which the boys are beginning to chase in the street!

Such are the fruits of a few years exertion, and we conscientiously believe them as rich and abundant as the most sanguine friends of reform ever anticipated. We must not forget, however, that the disease remains uneradicated. The inflammation has been subdued into a subacute and chronic form; but such a morbid action may do the work of destruction, and is at all times liable to be awakened into activity. We call upon our brethren, especially, to be vigilant and tireless in this labour of love and duty. Of all the professions, theirs is the one which may exert the greatest corrective power, and *therefore* lies under the heaviest responsibility. D.

LOUISVILLE MARINE HOSPITAL.

It is pretty universally conceded, we believe, that Clinical practice cannot be rendered of much avail to a large medical class, where the patients are examined and prescribed for in the ordinary wards of a hospital. But few, comparatively, of such a class, can see either the patient or the medical attendant, and all interest is soon lost in the case where the ear alone is addressed and the symptoms cannot be noted. Impressed with this disadvantage, and regarding the Hospital as the right arm of the Medical Institute, the Faculty determined, last winter, on erecting a Lecture and Operating Room in connexion with the main building. This room is now in progress and will be in readiness for the class by the last of October. It is placed a few feet south of the old building, of which it will form a wing, being connected with it by a gallery, along which the patients, either for medical or surgical treatment, will be carried on their beds from the wards without exposure or inconvenience. The room will the be capable of seating four hundred persons, and being arranged in form of an amphitheatre, with sky-lights, will afford to each student a full view of the patient while undergoing examinations or opera-

tions. In this arrangement, the well-founded objection against the usefulness of hospitals to large classes of medical students, that they can neither see the sick, nor distinctly hear the prescriptions for them, will be wholly obviated. The Institute will be fully in possession of this most important element of medical instruction.—A sufficient number of patients is always found in the medical and surgical wards to give interest and value to clinical lectures. Y.

TEA AND COFFEE, AS THE CAUSE OF SICK-HEADACHE.

Dr. Brooks, of Harrisonville, Mo., demolishes the theory of Dr. Burbell, noticed in our July No., that the use of tea and coffee is the source of the accumulating anguish which flows from this disease. He proceeds on this wise:

"I was brought up in Kentucky in early times when it was not easy to procure tea and coffee, and when, consequently, they were little used. Those who lived most luxuriously drank coffee once a week, but then it was not made strong, as now, but was frequently mixed with parched rye or wheat. In those days, I had around me a connexion of about a thousand souls, all of whom, except one, were more or less addicted to this complaint. Since that time, my family connexion has much increased, and from all I can learn sick-headache has diminished amongst them, notwithstanding that, like most other people, they have fallen into the habit of drinking tea and coffee, many of them to excess. I do not wish to be understood as expressing a belief, that these beverages are remedies for the disease, but only that they are not the most common cause of it, and that total abstinence from them will not relieve every case. I have had a fair opportunity of knowing something about this matter—I am upwards of fifty-two years of age, and have been engaged in the practice of medicine for nearly thirty years.

"I wish to make an enquiry about a change which sometimes takes place in children after birth, commonly called *double lip*. I have seen no mention of it in any medical work, nor have I ever heard a medical man speak of the infirmity. Within the last three and twenty years I have met with it in thirty-one children, who were born without it, which I believe is always the case. The deformity commences generally a little to one side of the lip, and gradually

the inside protrudes downwards. I believe it is confined to the upper lip. What is the cause of this affection? Can it be prevented, or cured when it has become confirmed." Y.

VELPEAU'S OPERATIVE SURGERY.

A translation of this work is now in progress by John R. W. Dunbar, M. D., Professor of Surgery in the Washington Medical College, Baltimore, and will be published in the course of next spring. Velpeau's Surgery is one of the ablest works on that subject extant in any language. It will be accompanied by notes on American Surgery by the Translator, and executed with the ability of which the character of Professor Dunbar gives promise, will no doubt prove highly acceptable to the American profession. It should be mentioned, that this is the second edition of Velpeau's Surgery, much enlarged and improved. Y.

HEALTH OF LOUISVILLE.

From the unusual quantity of rain which fell in this city in the last Spring, and first Summer months, it was apprehended that the Fall would be sickly. Up to this time, we are happy to say, these apprehensions have not been realized. The cases of Fever have not been numerous, and, generally, those which have presented have been of an uncommonly mild and manageable character. Upon the whole, it is the opinion of the oldest physicians of the city that few more healthy seasons have passed over Louisville. Y.

DEATH OF DR. PERRINE.

The readers of this Journal, and of its predecessor in Cincinnati, the Western Journal of the Medical and Physical Sciences, will regret to hear that Dr. Henry Perrine, whose interesting communications have often met their eye, is no more. He was killed by the Indians during the night of the 6th of August last, at Indian Key, South Florida, where his last communication to the Journal was dated.

Dr. P. was a native of New Jersey, and received his professional education, we believe, in one of the New York schools. The commencement of his professional career was in the state of Indiana, whence he removed to Mississippi. In both states he distinguished himself by the successful energy of his practice in the malignant intermittents, which from fifteen to twenty years ago prevailed in the West and South. Accounts of his treatment of such cases, by scruple and even drachm doses of Sulphate of Quinine, were published soon afterwards in the American and the Western Journals. While residing in the state of Mississippi, he received the appointment of Consul to the Mexican city of Campeachy, in the province and peninsula of Yucatan, where, during a residence of several years, he made the natural productions and diseases of that region a subject of special study. When the epidemic Cholera reached it, his superior skill and benevolence rendered him a public benefactor. His account of the disease was published soon afterwards in the Western Journal.

During his residence abroad, his active and patriotic mind conceived the design of transplanting into the southern part of Florida a great number of tropical plants, useful in medicine, dietetics, and the arts. To accomplish this, he returned to the United States, and presented to Congress a memorial, praying for the grant of two townships of land in South or Tropical Florida, on which to make the experiment. A report in favor of his application was made, but not acted upon at that session. With indomitable energy, he pressed into his service a great number of his brethren and other scientific men, in different parts of the Union, and at the next or a subsequent session, new and elaborate reports in favor of the object having been made to both Houses of Congress, he obtained the grant of one township.

Although his constitution had been greatly injured by a residence in hot climates, he repaired forthwith to the scene of his future operations, and entered upon them, with his characteristic zeal. He had fixed his residence with a few families at Indian Key, which in the darkness of the night was attacked by 100 or 150 Indians. He went to the cupola of his house and spoke to them in the Spanish language, when he was shot, or at least did not return. His wife and three children effected their escape. His house was burned up, and all his valuable notes and papers, on the production and diseases

of the South consumed along with his body. The following tribute to his character, we extract from a letter of the Hon. James Whitcomb, Commissioner of the General Land Office, at Washington, dated August 24th:

"I enclose you this morning's Intelligencer, by which you will see, that our mutual friend, Dr. H. Perrine has fallen a victim to the savages of Florida. Besides the irreparable loss to his family and his friends, I am apprehensive that his untimely death will defeat the enterprize to which he had, at a considerable expense and a great loss of time devoted himself for the cultivation of tropical plants in that territory. Congress had at the session before the last, as I presume you are apprized, granted to them a tract of land for that purpose, and orders were issued, at his request, not long since, from the General Land Office for the survey of the grant.

"Philanthropy with him was a moving and active principle, nay it was carried to the verge of enthusiasm. He looked, I doubt not upon the Seminoles, as misguided, but well-meaning, and that he could successfully appeal to their humanity. Hence his attempt at a parley and his melancholy fate."

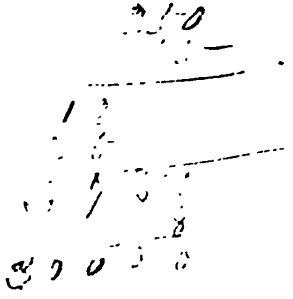
In several letters received at different times, Dr. Perrine has sought to impress on us his own conviction, that Tropical Florida is actually one of the healthiest spots on the continent, and peculiarly fitted by its climate, for the winter residence of the consumptive.

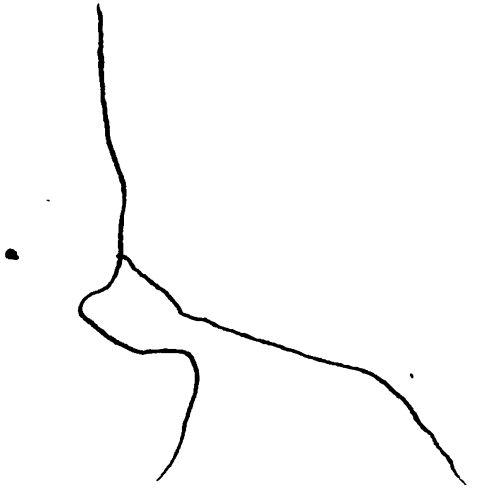
D.

TENOTOMY—A CORRECTION.

To insure a correct and well executed wood cut to accompany the Essay on Tenotomy, the publishers of this Journal sent the original drawings from nature, furnished by the author, to a Cincinnati artist—we are sorry that we are unable to publish his name. Besides the coarseness of the cut, which must strike every eye, its want of accuracy is such as to demand a brief explanation, in order that an erroneous impression of the success of Dr. Richardson's operation be not conveyed. The *ensemble* of the extremities, before as well as after treatment, is much more heavy and clumsy than the drawings indicated; in addition to which, the measurements around the heel and instep of the deformed member are nearly one-

third too great as they are represented in the plate. The same want of observance of the drawings exists in the representation of the restored member, in which the instep is so much elevated as to resemble a shoemaker's last, and the foot appears too much extended, whilst the leg, which in the original drawing was *completely* extended on the thigh, appears in the wood cut partially flexed. Y.





THE

WESTERN JOURNAL

OF

MEDICINE AND SURGERY.

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THE

WESTERN JOURNAL

OF

MEDICINE AND SURGERY.

NOVEMBER, 1840.

ART. I.—*Reports of Cases, treated in the Louisville Marine Hospital.* By GEORGE W. BAYLESS, M. D., Demonstrator of Anatomy in the Medical Institute of Louisville.

AMONG a considerable number of cases, treated in this house during the months of July and August, 1840, the following are considered to possess sufficient interest to merit a brief notice.

In presenting these cases, we shall not pursue the usual plan of noticing the daily condition and changes, with the prescription, for the reason that we deem it better to abbrevi-

ate by giving the general features and results, than to enter into such a detail, which is not called for by their particular character.

Case 1st. Aneurism of the Aorta.—James M'Guinnative, of Ireland, aged about twenty-six years—a stout muscular man about five feet ten inches high—a stage driver by occupation, and of intemperate habits, was admitted July 2d. Stated that he had always been healthy up to last winter—that in January last, from exposure incident to his occupation, he took a severe cold, attended with cough and pain in one side, could not recollect which—that he was puked, purged, &c. and that he got better, but not entirely well. That he was able to go about in a short time, but continued to have a dry cough, attended with some dyspnœa, &c. which prevented him from resuming his occupation. That this state of things continued through the remainder of the winter and spring, and that he began to get worse about two or three weeks before he entered the hospital.

Symptoms when admitted.—*Surface*—skin in good condition, inconsiderable emaciation.—*Head*, normal.—*Thorax*—cough troublesome, occasional slight dyspnœa, inconsiderable mucous expectoration, pretty good resonance, and nothing unusual discovered by auscultation. Circulation not well distributed to the extremities—pulse eighty, small and feeble—no particular examination made of the heart.—*Abdomen*—tongue slightly covered with a whitish fur; appetite not good, but the stomach retained and digested very well whatever of food was taken; bowels, in a good condition, no pain nor tenderness, upon pressure, in any part of the abdomen.

Diagnosis uncertain; most probably chronic bronchitis, consequent upon the cold taken last winter. Directed vegetable diet—cupping over the anterior parts of thorax—

brown mixture, and mucilaginous drink. Found him at next visit somewhat relieved of the dyspnœa, but cough still troublesome. Brown mixture continued.

There being no manifest change in two days, he was ordered ung. tart. emetic, to free pulsation on anterior thorax; brown mixture to be continued.

A copious crop of pustules was produced in a day or two, when we discovered great force in the action of the heart, communicating a considerable impulse to the hand, and attended with acute pain upon pressure. Tinct. digital. was added to the brown mixture, and cups were applied to the præcordia.

The pain was mitigated by the cupping, but this great activity in the pulsation of the heart having continued unintermittingly for several days, and the dyspnœa, dry cough, and feeble pulse, which was very small considering the activity of the heart, still continuing, led us to believe that there was contraction of the left ventriculo-aortic valves, nowithstanding we could detect no morbid alteration in the sounds of the heart. We could not only easily account for the symptoms just named, upon the supposition of this lesion of the aortic semi-lunar valves, but we were compelled to suppose this or some affection of the aorta itself, which was not then indicated by any particular symptom. Brown mixture discontiued. Pulv. digital. gr. 1—morning, noon, and night.

This was continued several days, when we were called to him early in the morning, and found him laboring under extreme dyspnœa—heart beating violently—pulse much fuller and stronger than we had ever seen it, and had only changed within a few minutes, as we were informed by the house student—surface cold, and covered with a cold perspiration; face livid and turgid with blood—eyes semi-closed, and pupils

dilated—jugulars stuffed—total insensibility—brain evidently greatly engorged and oppressed with blood, and apoplexy seeming to be momentarily threatened. Before we reached the house, sinapisms had been applied to the breast and extremities, and an effort made to abstract blood: only two or three ounces could be obtained. A large orifice was immediately opened in the arm, and about thirty ounces of blood soon abstracted, with almost entire relief. His condition just described, together with the effect produced by thus rapidly diminishing the quantity of blood in circulation, confirmed us in the view which we had taken. These paroxysms continued to recur daily, and frequently two or three times a day, and always required the abstraction of blood before relief was obtained. We found that relief was afforded more speedily and with the loss of a smaller quantity of blood, which became desirable from the necessity of its frequent repetition, by opening a jugular. So satisfied was he that blood-letting was his only source of relief, that he implored it as an act of mercy, when a paroxysm was about to come on.

A few days before death, the nature of the affection became apparent from an increased fulness which was observed to make its appearance, extending two or three inches by the side of the left edge of the sternum,—commencing at the top—from a palpitation which became very obvious at the intercostal spaces of the part, and from his complaining of a "lump which choked him" about the top of the sternum. Death took place on the 8th of July, during one of the paroxysms already described.

Examination of the Body Nine Hours after Death.

Head. No cerebral symptoms having been observed since

opening the jugular had been resorted to, this cavity was not examined.

Thorax—Lungs.—Pulmonary veins partially engorged with very black blood—normal in every other respect, save interlobular emphysema which was pretty generally present throughout the lungs. *Heart.*—Right auricle and ventricle contained fibrinous concretions—the auricle containing also a coagulum of black blood—while the ventricle was almost entirely filled with an opaque, firm concretion, which adhered with some firmness to the columnæ carneæ; there was also a dark coagulum in the left auricle, but the left ventricle was empty. No particular lesion of the heart was discoverable, save a slight hypertrophy, without dilatation, of the left ventricle. *Aorta.*—At its arch we found an aneurismal sac, a cylindroid in shape, about two and a half inches in length, and two in diameter. It contained a small opaque coagulum, and probably others, but wishing to preserve it entire we did not lay it open. By the whole of its posterior surface it adhered very firmly, indeed inseparably, to the anterior surface of the trachea, just above its bifurcation. The coats of the sac were entire.

Abdomen.—No lesion, of consequence, of any its viscera.

The heart and aorta with the adherent trachea were placed in the Pathological Cabinet of the Louisville Medical Institute, where they may be seen.

Case 2d. Dysentery.—M'Donald, native of Ireland, aged twenty-seven years, (a mariner,) was transferred from the surgical to this ward on the 12th of July. He had been about two months in the surgical ward, under treatment for syphilis; and two days before he was transferred he was severely attacked with dysentery—having from ten to twenty evacuations in the twenty-four hours, of blood and mucus, produ-

cing great prostration, and attended with considerable tenesmus, but unaccompanied by any tormina, or febrile action. These symptoms continued at the time of his transfer. We will remark that the disease was prevailing to some extent in the city at the time, but this was the only case that made its appearance in the hospital.

℞. Calom. gr. ss., opii gr. ¼, ipecac. gr. i. ft. pilul., one every three hours. ℞. Tinct. opii gtt. xxv., mucilag. Amyli. f℥ iii. ft. enema, to be repeated pro re nata. Cupping over both iliac regions; mucilaginous drink and farinaceous diet.

Under this treatment, with the addition of blisters to the iliac regions continued for several days, the disease seemed to subside rapidly. The number of evacuations was reduced to three or four a day; they changed to an opaque whitish mucus, the tenesmus entirely subsided, and slight ptyalism was induced. Directed—Oleag. mixt. f℥ ss., every two hours until the bowels should be gently opened. Anodyne enema, diet and drinks continued.

Copious fecal evacuations, mixed with a very small quantity of the opaque mucus, were produced by the oleaginous mixture. Strength pretty good; some appetite. ℞. opii gr. ¼, ipecac. gr. i. ft. pil. one every four hours. Diet and drink continued.

There was decided and progressive improvement for several days in the character of the evacuations, in strength and appetite; but still some diarrhœa. Dover's powder grs. v. every six hours. Chicken broth—mucilag. drink. Continued to improve for some days, but the diarrhœa still obstinately continued, and the evacuations became of a brown watery character, mixed with some fecal matter, and very offensive. ℞. acetat. plumbi grs. ii., opii gr. ¼, ft. pil., one every three hours. Anodyne enema—farinaceous diet—mucilaginous drink.

From this time the diarrhœa continued; he gradually sunk. Hope's camphor mixture was employed, but he complained of its burning him; ammoniated julep, wine whey, sinapisms, &c., but he continued to sink, and died exhausted on the 27th of July.

Examination of the Body Fifteen Hours after Death.

Exterior.—Extreme emaciation. A bubo in each groin—an ulcer about the middle of the hypogastric region, leading to a cavity between the oblique and rectus, and transversalis abdominis muscles somewhat circular in its shape and three or four inches in diameter, having a branch extending down over the left upper branch of the pubis, so as to penetrate three or four inches between the adductor muscles. It contained a brownish offensive matter; and that portion of the pubis over which it passed was carious.

Head—Not examined.

Thorax.—Viscera normal.

Abdomen.—No trace of peritoneal inflammation could be discovered. *Stomach.*—Mucous membrane of its cardiac extremity thickened, and in a state of deep hyperæmia. *Small Intestines* normal. *Large Intestine.*—A number of ulcers, throughout its whole extent, mostly circular in form, and varying in size from two or three lines, to eight or nine in diameter. They presented a dark blackish appearance, the smaller penetrating only through the mucous coat, and the larger, having slightly elevated edges, penetrating through the subjacent tissue, leaving only the peritoneal entire. The mucous membrane was of a pale yellow color, softened throughout and deficient in many places. The deficiences increased from the cœcum to the rectum, there being only some fragments of the membrane left at the sigmoid flexure, and en-

tirely wanting in the rectum. At the place where it had lost the subjacent cellular tissue it presented a purple or blackish hue. Liver, spleen, and kidneys normal.

The large intestine and carious pubis were preserved for the Pathological Cabinet of the Medical Institute.

Case 3d. Dropsy.—M'Kay, a native of Kentucky, aged twenty-seven years—a marine—temperate habits, was admitted July 20th. Stated, that he had an attack of yellow fever in Natchez, in the fall of '39; that during convalescence from that attack he was seized with intermittent fever, which continued through the winter; that during the spring it several times ceased, and returned again at longer or shorter intervals, and that three weeks before entering the house his abdomen and extremities commenced swelling.

Condition when admitted.—Very weak, unable to sit up. *Surface*, extremely pale; skin distended by general anasarca, extending from head to feet; face greatly swollen; parietes of thorax and abdomen also implicated; lower extremities prodigiously large, upper not so large. *Head*, normal. *Thorax*, respiration performed easily; could discover no effusion into that cavity. *Heart*, normal; pulse about eigthy, and of tolerable strength. *Abdomen* immensely swollen by serous effusion, as evinced by a very obvious fluctuation. Digestion feeble; bowels constipated; urine in moderate quantity; could not discover the condition of the liver or spleen, by physical exploration, so great was the abdominal enlargement. Elaterium gr. ss., every two hours, until the bowels should be freely purged—farinaceous diet.

This treatment was continued a week, tolerably free fecal evacuations having been produced, and a slight diminution in the size of the lower extremities.

Failing about this time to make our usual daily visit, we

found on the second day, so great a diminution in the size of the face and abdomen that we were unable to recognize our patient until informed by himself of the nature of his disease. In the interval he had very copious watery evacuations, mixed with fecal matter, amounting to near a gallon in twenty-four hours, but yet his strength was not lessened. Some irritation of the stomach. Suspend the use of the medicine one day.

The elaterium was commenced on the second day and was continued for five or six days; at the end of which time, or about two weeks from his admission, the abdominal effusion seemed entirely gone, the swelling of the face and general surface had disappeared, there remained only a vestige of the swelling of the lower extremities, and his strength was so improved that he was able to walk about the ward. Discontinue medicine—bandage to lower extremities—nutritious diet.

From this time forward he went on to improve, without interruption, save one paroxysm of intermittent, and when the ward was transferred to Dr. Caldwell, on the 1st of September, he was on the use of the precipitated carbonate of iron, and was able to go about the yard, and perform the duties of assistant nurse.

Case 4th. Dropsy.—On the 17th of August, was admitted Hartshorne, native of New York, aged forty-seven years, a laborer—temperate habits. Stated, that he had for several years been subject to attacks of rheumatism; that about six weeks before his admission he was seized with acute rheumatism, affecting more particularly the knees; that he employed no physician, and used no remedial means, save perhaps some local stimulants; that the "pain in his knees" subsided in about a month; that shortly after he was seized with a very acute pain in the region of the heart, which continued three

days, and spontaneously subsided; that about the same time or immediately subsequent to it, his feet and legs, and abdomen commenced swelling, and continued to do so until the the time of his admission into the hospital.

Condition when admitted.—*Head*, normal. *Thorax*—respiration natural. Resonant throughout, save great dullness upon percussion, over a space covering the præcordial region proper, extending from the second to the seventh intercostal space, and about six inches in width. *Heart*, was found beating with considerable force, the impulsion being felt at the third intercostal space, above the nipple, instead of, as usual, at the cartilage of the fifth rib; no morbid sound could be detected by auscultation; pulse about ninety and very feeble. *Abdomen*, greatly distended by serous effusion; fluctuations very plain, appetite not good, digestion feeble, bowels loose, having four or five watery evacuations in twenty-four hours; urine in natural quantity; could not ascertain the condition of the liver and spleen. Lower extremities œdematous.

Diagnosis.—Contraction of the ventriculo-aortic semi-lunar valves, probably by the deposit of lymph at the time of the acute pain complained of, when metastasis took place. Probably hydropericardium.

Ascites and œdema of the lower extremities, dependant upon the obstructed circulation. From the diarrhœa we thought that absorption of the effused fluid had commenced, and was being thrown off by the bowels. Elaterium gr. ss., every two hours—farinaceous diet.

The treatment was continued four or five days, with the effect of producing almost a constant thin, watery discharge from the bowels, with an obvious diminution in the size of the abdomen and lower extremities, and without much loss of strength. In consequence of some irritation of the stomach

and bowels, the use of the medicine was suspended thirty-six hours. It was then re-commenced and continued until the 26th, with the same effects; when the ascites and œdema were almost entirely gone, and the dull præcordial space was not so large. The use of the medicine was again suspended, but the discharges from the bowels continued, and when he was transferred with the other patients on the 1st of September, there was scarcely a relic of the ascites and œdema; strength improving; free from pain, and in a fair way for at least a temporary recovery. From the active pulsation of the heart and the feeble pulse still continuing, there probably exists the structural lesion of the aortic valves spoken of, which will render him liable to dropsy again.

Case 5th. Neuralgia relieved by the extraction of a Tooth.—In the American Journal of Medical Sciences, for August, 1840, p. 509, Mr. G. B. Fundenberg, Dentist at Pittsburg, makes some observations on facial neuralgia, in which he asserts with most apparent confidence, that at least two thirds of the cases of this affection "are caused by pressure or other local irritation of the nerve." In support of his positon he gives three cases. In the first—a case of fourteen years standing, the anterior maxillary foramen, the point at which the patient had complained of most pain, was nearly closed; most probably by an osseous deposit, consequent upon the formation of an alveolar abscess contiguous to it. The foramen was exposed by an incision and drilled out, by which the nerve was freed from pressure, and the patient entirely relieved from his painful malady. In the second, a well marked case, the suspicion arose that it proceeded from some affection of the teeth; and upon tapping a superior bicuspis the patient screamed out with pain. An immediate cure was

effected by extracting the tooth, on the end of the fang of which was found "a large exostosis." In the third—a case of two years standing, in which the patient had complained of "a singular pain in the side of the head, accompanied by a darting pain in the lower jaw," and which gradually extended down the neck and side, a similar effect as in the second case was produced by tapping an inferior cuspidatus—the tooth was extracted—"a large osseous deposit was found on the fang"—and the patient was relieved.

We are by no means prepared to assent to this opinion of Mr. F.—that two thirds of the cases of facial neuralgia proceed from the causes above mentioned; nor are we disposed to controvert his position; for it is very difficult, in a disease the cause of which has been admitted by all writers on the subject to be so obscure, to fix any proportion of the kind. It will certainly require much additional evidence to establish the truth of his position. Doubtless however, he is correct in as far as he supposes some cases to be attributable to such cause; aud we can give a case which we consider in point.

In the early part of July last, before the number of the Journal containing Mr. F.'s article was published, we were called to see Sidney, a negro girl, belonging to a gentleman of this city, who had been suffering a day or two with a severe "pain in her face." She is about 20 years old, stout, and has been always healthy, save that recently she has suffered with some slight catamenial derangement. At the time we were called to see her, there was no derangement of her general health, and she complained only of pain in the left side of her face, which was most severe about the articulation of the jaw, and extended anteriorly to the angle of the mouth, and nearly to the nose—above, a short distance

upon the side of the head, and below, upon the neck as far back as the edge of the trapezius muscle, and nearly down to the point of the shoulder. It was paroxysmal in its character—was much the most severe at night—and unattended by any febrile excitement, tumefaction, heat, &c., showing it to be clearly a case of neuralgia, and not of rheumatism. A purgative had been given before we saw her, and we directed strong counter-irritation by means of a small blister by the concentrated spts. ammon. over the root of the facial nerve; and 10 drops of the acet. tinct. of opium, to be repeated as might be necessary.

This treatment was continued for several days, and the severity of the paroxysms was somewhat mitigated by the repetition of the circumscribed blister, which was generally drawn in two or three minutes; but no material improvement was effected, and she was directed to rub the face frequently and freely with veratria ointment, containing fifteen grains to two drachms of lard. Several days elapsed with no relief, save the temporary mitigation of pain by the blister; and a pill containing the twelfth of a grain of veratria was directed to be taken every four hours, together with a continuation of the ointment, &c. This treatment was kept up until the twelfth or fourteenth day of the attack, without any additional amendment, when upon examining her mouth we found several decayed teeth in both the upper and lower jaw of the affected side. Thinking that possibly the condition of the teeth might have caused some irritation of the second or third branch of the fifth pair of nerves, which could be transmitted to the portio dura by the free and anastamosis existing between them, and thus have produced the neuralgia, we sent her to a dentist, who found that some pain was produced in several of the decayed teeth by tapping on them,

and severe pain in the first molar of the upper jaw by the same means. He extracted the tooth, and found at the extremity of its root a sac about the size of a pea, which had been filled with pus, but was ruptured by the operation. The root itself was carious; so also were several fangs that were extracted. Some soreness remained for several days, but about six weeks have elapsed, and she has had no return of the neuralgia.

September 10th, 1840.

ART. II.—*Stramonium in Dysmenorrhœa.* By Dr. T. J. COGLEY, of Mount Vernon, Ohio.

MRS. S., æt. seventeen years, commenced menstruating at fourteen. Had not the slightest difficulty during the first three periods, but during the fourth period she was exposed to cold, and the discharge was checked. From this time she was much afflicted with dysmenorrhœa at each period; but married soon after she was fifteen. This event seemed to augment the disease very much, and violent hysteria soon supervened, before each menstrual period. Every few months she had an attack of hysterical *convulsions*, and when she had no convulsions, experienced extreme difficulty in menstruating. She did not come under my notice until the 12th of May, 1840, when I found her laboring under all the distressing symptoms of dysmenorrhœa. I prescribed camphor in 10 gr. doses every hour, for three hours, without the least mitigation of the pain, which was excruciatingly severe. I next resorted to sulphate of morphia, the warm bath and venesec-

tion; but, although the morphia was given in large and repeated doses, she continued to have the most violent convulsions I have ever witnessed for forty-eight hours, when I commenced the administration of stramonium. I gave the pulverized seeds, in large doses every four hours, until her pupils were greatly dilated, when the convulsions began to subside, and the menstrual discharge became more copious. During this administration I prescribed frequent enemata of simple warm water. Her senses speedily returned, and in a few days she was in ordinary health.

Believing that irritation existed in the cervical vertebræ, some time after the above attack I cupped her, on the back of the neck and between the shoulders, and afterwards applied an epispastic. About five days before the return of the menses in June, I gave her an active cathartic of ex. col. comp., after the operation of which, I again put her upon the use of the stramonium in substance, in such doses as to dilate the pupils considerably. The patient was kept in this condition, on low diet, until the catamenia returned, which was about five weeks from the last period. The discharge was more copious, and attended with less pain, than at any former period, except the three first above mentioned. During the next interval the patient was kept on low diet, and a short time before the expected return of the menses, in July, she was bled for pain in the head, and again put under the influence of the stramonium as above. The discharge came on this time in about thirty-one days, and was attended with but little discomfort. It may be thought, that the venesection, cupping, blistering and cathartics, effected as much perhaps, as the stramonium. But I think not; as they had been frequently prescribed, on former occasions, by other physicians. Before she came under my notice, the tinct. guiacum, oil of

savin, and various other articles had been ineffectually tried, but particularly the first.

Having used the stramonium with more or less success, in at least six cases, I am induced to look upon it as one of the most efficient remedies we have in dysmenorrhœa. But the system must be prepared for its reception. It being, in my opinion, contra-indicated wherever there is a plethoric, or an inflammatory condition. These preparatory measures may be thought to have had some agency in ameliorating the disease, but I have often seen them fail, while on the other hand I have used the stramonium without its being preceded by venesection or catharsis. Where there is a plethoric state of the system it undoubtedly enhances its sanative effects, to premise venesection and catharsis, particularly the latter. It must be prescribed as above, at each successive menstrual period, until the dysmenorrhœa is entirely removed, or the woman becomes pregnant.

August, 1840.

ART. III.—*Facts and Remarks on the Sensibility to Caloric.* By THOMAS TOWNSEND, M. D., of Wheeling Va.

DARWIN, in the first volume of his Zoonomia, Sec. XIV., after speaking of the universal distribution of heat through all bodies in nature, suggests the idea that there may be, and probably is, a separate set of nerves from those of touch to distinguish heat. "There is no circumstance," says he, "of more consequence in the animal economy than a due proportion of this fluid of heat; the digestion of our nutriment in the

stomach and bowels, and the proper qualities of all our secreted fluids being produced or prepared partly by animal and partly by chemical processes, depend much on the quantity of heat; the excess of which or its deficiency alike gives us pain, and induces us to avoid the circumstances that occasion them. And in this the perception of heat essentially differs from the perception of the sense of touch, as we receive pain from too great pressure of solid bodies, but none from the absence of it. It is hence probable, that nature has provided us with a separate set of nerves for the perception of this fluid, which anatomists have not yet attended to."

In confirmation of this supposition he says: "If we look at a hot fire, we experience no pain in the optic nerve, though the heat along with the light must be concentrated upon it, nor does warm oil or warm water poured into the ear give pain to that organ; and hence their organs do not perceive small excesses or deficiencies of heat." He thinks that heat has no greater analogy to the solidity or figure of bodies than to their color or vibrations, and that there is not sufficient reason for our ascribing the perception of heat and cold to the sense of touch, to which it has generally been attributed.

"There is another circumstance," he says, "would induce us to believe, that the perception of heat and cold do not belong to the organ of touch; since the teeth, which are the least adapted for the perception of solidity or figure, are the most sensible to heat or cold; hence we are forewarned from swallowing those materials, whose degree of heat or coldness would injure our stomachs. * * * The lungs are not sensible to heat and cold."

Darwin then gives the following extract of a letter of his relation Dr. R. W. Darwin, of Shrewberry, when a student

at Edinburgh: "I made an experiment yesterday in our hospital, which much favors your opinion, that the sensations of heat and touch depend on different sets of nerves. A man who had lately recovered from fever, and was still weak was seized with violent cramps in his legs and feet; which were removed by opiates, except that one of his feet remained insensible. Mr. Ewart pricked him with a pin in five or six places, and the patient declared that he did not feel it in the least, nor was he sensible of a very smart pinch. I then held a red hot poker at some distance, and brought it gradually nearer, till it came within three inches, when he asserted that he felt it quite distinctly."

In the year 1812, when I was a student with Dr. M'Namee, of Vincennes, Indiana, Judge Vanderburg of that place was attacked with general palsy which came on slowly, but at length he lost the power of his limbs and became confined to bed. Dr. M'Namee was his attending physician, and Dr. Scull, formerly of Pittsburgh, consulting physician. During the time they were using electricity as one of their remedial agents, I solicited them to make Darwin's experiment, for the purpose of ascertaining whether the Judge could distinguish heat, after having lost the sense of touch together with the power of muscular motion. To this they assented.

The Judge lay in a room, the door of which, was opposite to the foot of his bed. He was not informed of the intended experiment. For the experiment the bedclothes were thrown from his feet and legs upon his breast so high that he could not see as low as the top of the door, and consequently could not see the entrance of the servant who brought in the fire. The feet and legs being thus uncovered were first pricked with a pin, and then pinched as hard as was consistent with humanity, and he declared he felt nothing. Then a sig-

nal was given and a servant entered with a shovel of hot coals. This was brought within twelve or fifteen inches of his feet and legs, when he immediately exclaimed, What, what! What is that, that is so warm?

This experiment clearly showed that the power of perceiving heat remained unimpaired, notwithstanding there was an entire loss of the sense of touch or feeling, and the power of muscular motion or volition, and went to confirm the opinion of Darwin, that there are separate sets of nerves for these separate functions.

Since the time of Darwin, and since the experiment of Drs. M'Namee and Scull, Sir Charles Bell has, by dissections and experiments, most satisfactorily demonstrated the existence of separate sets of nerves for separate and specific functions besides hearing, seeing, and smelling. He has shown that one set ministers to the function of what he calls common sensation, that is, touch. Another to the function of muscular motion, that is, volition, and another to the function of associating the apparatus of respiration with all other parts of the body. This additional knowledge on the physiology of the nervous system affords strong analogy in favor of the supposition that there may be, and probably is, a separate set of nerves for distinguishing heat.

In August, 1835, James Howell, of Wheeling, Virginia, was attacked with cholera morbus six or seven miles from town, from which he soon recovered and returned to his residence. A day or two after his return he was suddenly seized with a paralysis. When I visited him he complained of feeling "dead," as he expressed it. Mr. Howell had not lost all muscular power; he could move his hands and arms a little, and make some ineffectual efforts to turn himself in bed. He soon recovered from this and was able to walk. But he made

the discovery that he could not feel any heat. He said that he "felt all the time as cold as ice"—that when he came to the fire he could not tell by his sense of feeling when he was warm, or whether he was burning. At a time when he said his feet and legs felt "as cold as ice," I put my hand on them and they felt to me as warm as the flesh of ordinary persons.

To-day, July 27, 1840, Mr. Howell called on me, when I read him the foregoing paragraph, and he said it was strictly true. He moreover stated, that from the back part of his head down the whole length of his spine, he feels all the time cold, and from the calf of his legs down he feels no heat. I felt his skin again, and it was to my hand as warm as that of any other person. He farther stated, that from 1835 to the present time, he has had great weakness of his hands and arms, and frequently can scarcely use his knife and fork in eating, and that he is subject to frequent cramps in his legs.

This case is the opposite of that of Judge Vanderburg, of Vincennes, who retained the power of distinguishing heat after that of muscular motion and of touch or feeling was lost. Mr. Howell retains to a considerable extent the power of muscular motion and feeling, while the ability to distinguish or perceive heat is lost.

I think that physiological facts like these, as suitable cases may present themselves, ought to be recorded for the purpose of leading to farther observations.

The truth of Mr. Howell's case depends on his own veracity, and, so far as I know, there is no one in Wheeling who will doubt it. But I have had no opportunity to make any experiment on him during sleep for the purpose of testing it.

August, 1840.

ART. IV.—*Intermittent Fever, Hepatitis, Pneumonitis, Laryngitis and Intestinal Mucous Irritation.* By DANIEL DRAKE, M. D., Professor of Clinical Medicine and Pathological Anatomy in the Medical Institute of Louisville.

WE have written down these words to draw the reader's attention to a case which this day fell under our observation. We do not claim for it any *very* remarkable character, but as it is perhaps equal in interest to much that is published in medical journals we venture to send it forth.

Edward Dykes, a laboring man, living in the valley of Salt Creek, Chillicothe, Ohio, aged 32, of a sanguine temperament, and free from tubercular or other hereditary taint, was attacked about sixteen years ago, in autumn, with ague and fever, which lasted two months. For the next fourteen years it returned almost every atumn. During that long period, he continued most of the year to labor, and was free from cough, but sometimes had irritable bowels with slight diarrhœa.

In August, 1838, he was seized with the malady which had so often attacked him before. The type was at first tertian, and the cold stage amounted to a shake; at length became quotidian, with a chill only, about six o'clock, P. M. He continued to go about. Living with a "steam-doctor," he took two profuse sweats, and after the second "caught cold," and began to cough; at first without pain, but at length that symptom set in—being "located" in the right hypochondrium. His expectoration was sparing. He took two vomits of ipecac. but was neither bled nor blistered. Throughout the whole of the following winter, 1838, '39 he continued to have an evening chill, followed by fever in the early, and sweats in the latter part of the night, and frequent attacks

of diarrhœa. His cough still continued with little expectoration. His larynx became somewhat sore and his voice and cough hoarse and flat, which sounds have continued ever since. Much eating brought on fits of coughing, and these brought up, by exciting a retrograde œsophageal action, the food which oppressed his stomach. Throughout the whole of the year 1839, these symptoms, including the evening chill, continued to return upon him, but he still kept on his feet, and did not become very much emaciated. In the month of January last, 1840, he awoke in the morning with severe pain extending from the clavicle to the short ribs on the right side, with sense of suffocation, and a new reduction of the powers of his voice. He was bled, cupped, blistered and took expectorants; under which the symptoms rapidly abated. Since that time he has not had evening chills, nor morning sweats; though he thinks his feet and hands hot at night; but his diarrhœa has continued. He has from five to eight evacuations daily. The discharges in the forenoon, often appearing to have received a tinge from the food he had taken the day before, but frequently of a light hue. In the afternoon they are small in quantity and attended with tenesmus, and very commonly have the appearance of "matter from a sore," which has been the case for eighteen months. His urine is often saffron colored. His cough is slight and his expectoration extremely limited. Twice or thrice lately the mucus has been tinged with blood.

At this time he has a moderately furred tongue, natural in size and color. His eyes although a little turbid, are not jaundiced. His skin generally is reduced in whiteness, but that of his face is dark and sallow, nearly up to his hair. The ends or balls of his fingers are a little enlarged. His pulse is 76, quiet and regular—not hard.

Examination of the Neck and Chest.—Larynx with a tender spot on the right side, within the thyroid cartilage. Os hyoides exceedingly moveable. A grating sound when the larynx is moved by the hand. Chest, when examined, naked and in quiet respiration, well formed, except a little bulging out of the most convex part of the false ribs, of the right side; which side, however, has the same circuit with the left both there and above. Breathing chiefly diaphragmatic. When directed to make a deep inspiration, his left shoulder ascends and the ribs rise and bulge out; but the right remains unmoved. When a cord was passed round the body, with its middle pressed upon one of the spinous processes, and the ends were brought to the sternum, a deep breath rendered the last extremity too short, but there was no recession of the right end. Under percussion no hollowness was discovered over any part of the right lung or of the *sternum*, either in the erect or recumbent position—the hollow sound of the left side was rather greater than common. Auscultation could detect no respiratory murmur, anywhere over the right side; but disclosed a considerable degree of broncophony with an occasional sibilant ronchus. His respiration throughout the left lung was puerile.

The position and movements of his heart were natural.

Percussion, pressure and deep inspirations excited very little cough.

Examination of the Abdomen.—No enlargement of the spleen or liver; no tenderness in the region of the former, but decided soreness in the latter, extending into the epigastrium. General soreness on pressure over the abdomen, but especially across it, in a zone passing a little below the umbilicus. Soreness in both iliac regions, extending upwards and backwards, towards the hypocondriac and lumbar regions.

Slight general fulness of the abdomen—more or less pain—and considerable flatulence.

Examination of the Spine.—No tenderness except near the junction of the vertebræ with the sternum. No tendency to cough from pressure.

For some time preferred to lie on his left side—now lies easier on his right; walks and rides about, and thinks himself much better than he was last winter.

The recurrence of ague and fever upon this patient, through such a long term of years, is not unprecedented, as such things have happened before in the alluvial valleys of the West; but the transition which occurred in the autumn of 1838, from misamatic, to pseudo-hectic fever is a phenomenon not often seen. The tertian character and the shake of the annual attack of that autumn, seem clearly to characterize it as of malarious origin; and, moreover, he had at that time no cough nor other pulmonary difficulty, as far as we could gather from him. But at length he became affected with a double tertian or quotidian, and while this was still returning upon him, pneumonitis of a mild kind set in, and soon afterwards night sweats began, and with the chill and nocturnal fever continued for twelve or fourteen months; when in January, 1840, he seems to have had a re-inforcement of the pneumonic inflammation. Thus we have before us a series of little interruption, for eighteen months, commencing as an endemic *ague and fever* and ending as well marked *hectic*, with a transition from one to the other, in the most imperceptible manner. Still further, the fever assumed a hectic character, while the pulmonary affection was yet too recent, according to common experience, to have produced it. It appears from this case, that a miasmatic fever has not the

power to ward off a hectic, notwithstanding that opinion has had its advocates. Did not indeed the existence of a chronic intermittent, at the time the pneumonitis set in, facilitate the development of hectic—a paroxysmal fever with an evening chill, *naturally*, recurring at the same hour, which in him was the hour of recurrence of the mismatic chill? Did not the two modes of constitutional mordid action, notwithstanding the difference in their origin, so much resemble each other, as to coalesce? When, in singing, we open the mouth in the *manner* it is opened in yawning, that function is apt to be performed, although the condition which naturally prompts it is not present. But we shall not speculate further on this connexion, but request such of our readers as live in regions where ague is endemic, to keep on the look out for facts having a bearing on its relations with hectic fever.

What is the morbid anatomy of the lungs of this patient? The left is sound and sustains the *onus* of respiration. The right would appear to be impervious throughout, at least in its vesicular structure. The larger bronchial ramifications, only, admit air. How long it has been thus hepatized cannot be ascertained. From the general state of feeling of that side, and the condition of his pulse, it would appear that the inflammation had nearly ceased. Has the secretion into the parenchyma, been so great as to obliterate the capillary system to such an extent, that the inflammation ceased? May not a lung continue a long time in that condition, as it often does in a state of induration, from the compression of coagulable lymph, contracting around it? We have certainly met with cases of hepatized lung, connected with mild occasional hectic fever, which have continued for several years; and we may suppose that some very chronic cases which were regarded as tubercular have been of this kind.

The laryngeal affection in this case is distinctly marked. The relaxation of all the ligaments and muscles is indicated by the looseness of structure of that organ, and the play of the os hyoides upon it; not less than by the feebleness and flatness of the voice and cough. It is not impossible that the mucous membrane of the right side is in a state of superficial ulceration. The tinge of blood which he lately threw up perhaps came from such a spot. Whatever may be the exact pathology of this organ, it is, perhaps, sympathetic of the disease in the right lung.

Let us turn our attention to the abdominal viscera. It is worthy of note, that notwithstanding the repetition of ague for many successive years, the spleen is not enlarged; and we may here say, what should have been said before—there is no anasarcous infiltration into the extremities.

The liver is undoubtedly in a state of chronic inflammation. The tenderness under pressure, the occasional saffron color of the urine, the turbid and sallow hue of the skin, the early tendency to diarrhœa, the tenderness *in epigastrio*, and the cough with regurgitation, after a full meal, may be received as evidence of disorder of the liver. The preference for lying on the right side is ambiguous, inasmuch, as the great amount of respiratory duty, thrown upon the left lung, requires that the weight of the body should not rest on that side. But what shall be said of the bulging out of the false ribs over the liver? Was there a swelling, inflammation and abcess of that organ, some time ago, which pressed out and changed the convexity of those ribs? Is the liver at this time enlarged *upward and outward?* Is there a collection of pus in the sac of the pleura, resting upon the diaphragm? If so, there must be adhesion of the membrane above, for the protuberance is as great in a recumbent, as upright posture.

At this time, and indeed, for many months the more energetic morbid *actions* in this case, seem to be in the mucous membrane, more especially, perhaps, that of the great intestines. We did not see the discharge which the patient described as purulent, but presume they may be of that character. Are they from the liver, or from the intestinal membrane? The latter is most probable; and taken in connexion with the general abdominal tenderness, and the tenesmus, can leave little doubt of ulceration—probably in various places. Has this condition of the membrane arisen directly from the ague and fever; or is it a sympathetic effect of the liver disease; or has it come on in the way it arises in the progress of hectic fever from tubercle?

We shall conclude these off-hand pathological speculations with a few clinical remarks and suggestions.

It appears to us, that the right lung had passed through a transformation, and that although it will doubtless, at no distant time, be the seat of a revived and suppurative inflammation of a fatal kind, there was not any existing morbid action upon which remedies need to be directed, or, indeed, could be, if morbid *action* did exist. Our thoughts turned to the state of the liver, and especially the intestinal membrane, both of which, at the present moment, seem to be the seats of sub-acute inflammatory action. Although, however, we have called the action *inflammatory* we cannot regard it of such a grade, as to call for depletion. Moreover, there seem to be several objections to a depleting plan. 1st. The pulse is not hard nor frequent. 2d. An organic lesion, so extensive as that in the lungs, renders debilitating measures, to any degree, injurious. 3d. Ulceration of the bowels may be prevented by depletion, but it by no means follows that it can be cured by the same mode. Ulcers of the skin, of the va-

gina and uretha, of the meatus externus, of the conjunctiva, of the mouth and throat, especially when chronic, are not in general successfully treated with emollients and refrigerants, but with stimulants, astringents and escharotics, and often heal more kindly, if tonics be administered internally at the same time; wherefore should chronic ulcers of the colon and rectum be made an exception to these, and the patient subjected to a debilitating treatment? 4th. This patient for several weeks past, has been using a bitter tincture, made with whiskey, during which time there has been no aggravation of any of his symptoms, but an increase of flesh and strength.

Under these views we made the following prescription:—

1. A liquid, demulcent and gelatinous diet—in moderation.

2. The nitro-muriatic bath, to the region of the liver, epigastrium and umbilicus, every night.

3. A draught, three times a day, of ℥ij. of decoction of cinchona, and ℥ij. of lime water, mixed.

4. A pill every night, composed of two grains blue-mass, two of ipecac. and one of opium.

Are we asked, do you expect the final recovery of the patient under this or any other treatment? We answer no.

To such of our readers as may think their time lost by the perusal of this article, we beg leave to say, that the afternoon (July 29) is oppressively hot; and that, if we were writing in as pleasant weather as they will read, we should no doubt forestall them in that criticism.

REVIEWS.

ART. V.—1. *A Memoir of the Life and Character of Philip Syng Physick, M. D.* By J. RANDOLPH, M. D., Lecturer on Surgery, Member of the American Philosophical Society, etc., etc. Philadelphia: T. K. & P. G. Collins. 1839. 8vo. pp. 114.

2. *Necrological Notice of Dr. Philip Syng Physick; delivered before the American Philosophical Society, May 4th*, 1838. By W. E. HORNER, M. D., Professor of Anatomy in the University of Pennsylvania, etc., etc. Philadelphia: Haswell, Barrington & Haswell. 1838. 8vo. pp. 32.

THE biography of Dr. Physick possesses no uncommon interest, if we estimate it by the incidents which it affords. Yet it is a biography which, on account of the celebrity of the individual, will be extensively read, and which is calculated to exercise a most excellent influence upon the young men of the profession of which he was for many years the acknowledged head and centre in America. Dr. Physick was reputed, and we believe justly, a great man—as a Surgeon pre-eminently great; but his greatness was of a kind which does not oppress or alarm the beholder, but rather inspires him with a hope that he may attain to something like it, because it was the result of industry long directed to a single great object. It was a greatness, too, which we may admire without any painful abatement on the score of mingling

weaknesses. It was alloyed by no base quality. The lustre of his long life, passed before the public eye, was tarnished by no vice. Still, in contemplating his character, we find nothing extraordinary about him, but his extraordinary skill in surgery, and this he owed to a life of the greatest painstaking. His character was cast in the common mould, and his superiority was the growth of time, and appplication, and the sound moral culture which he received from exemplary parents, especially a pious mother. It is one, therefore, which we may study with decided profit, for it is of such worthies that it is especially true, that

> "The lives of great men all remind us
> We may make our lives sublime,
> And departing leave behind us
> Footsteps on the sands of time;
> Footsteps, that perhaps another,
> Sailing o'er life's solemn main,
> A forlorn and shipwrecked brother,
> Seeing, shall take heart again."

Dr. Physick was born in Philadelphia, on the 7th of July, 1768, of respectable parents. His father, an Englishman by birth, was a man of strong, sagacious mind, and strict integrity of principle. His mother was a pious and highly estimable woman, with a sound judgment, and great decision of character, in which qualities she was strongly resembled by her son. Having taken the degree of Bachelor of Arts in the collegiate department of the University of Pennsylvania, it became necessary that he should make choice of a profession. The mechanical turn for which he became so remarkable in his profession had early shown itself in his character, and he declared his preference for the trade of a silversmith, in which, fortunately for the interests of science and humanity, he was over-ruled by an inflexible father, who placed him

under the care of Dr. Adam Kuhn to study medicine. It is said that Mr. Physick was led to this choice by the skill which his son displayed in applying the bandage and dressings to his finger, which he had wounded whilst handling a knife. But his son seems never to have lost, even amid his most brilliant successes, this early inclination to mechanical pursuits. Dr. Horner relates, that

"Even within a short time of his death, in reflecting upon the events of his life, such as his anxieties for the health of others, his professional excitements, and the decrepitude and ravages made on his own constitution by disease, he regretted that he had not been indulged in his love for the business of a silversmith: his impression was that in securing to himself health and tranquil employment, his life would have been much happier, and a very sufficient measure of success would have attended his efforts."

Cullen's first Lines of the Practice of Physic was the book of the highest reputation at that day, and was handed to him by his venerated preceptor with such commendations that he was induced to commit it to memory—a feat, we presume, which has not often been performed since, and which it may safely be predicted will never occur again. The first experience of the young surgeon gave no promise of that coolness and self-control to which he afterwards attained, for the boiling of a skeleton, which he was called to witness, is reported to have excited in him so strong a disgust to the profession of medicine, that he renewed his entreaties to his father to permit him to become a silversmith. On another occasion, while witnessing an amputation, at the Pennsylvania Hospital, he became so sick that his father, who was present, was obliged to lead him from the amphitheatre before the operation was concluded. These incidents in the life of the Father of American Surgery will, doubtless, console and encourage

many a pupil who may be compelled, by a like infirmity, to retreat from the first operation of his first winter, amid the ridicule of his less sensitive class-mates.

Dr. Physick having continued to prosecute his studies under the direction of Dr. Kuhn for three years, during which time he also attended the medical lectures delivered in the University of Pennsylvania, embarked for Europe in November, 1788, when twenty years of age, for the purpose of completing his education in the great schools and hospitals of London and Edinburgh. In visiting Europe, his sole purpose was the acquisition of medical knowledge. No other object shared with this in his attention. No pleasure was seductive enough to lure him from his studies. He was fortunate in securing the services of John Hunter as a preceptor, and more fortunate in imbibing the spirit of his great master. Mr. Hunter, it is well known, was no great student of the writings of others, but he was indefatigable in the industry with which he pursued his original reseaches with the dissecting knife; and it was under his auspices that Dr. Physick acquired that minute knowledge of anatomy to which he afterwards owed his unrivalled reputation as a surgeon. The following anecdote related by Dr. Horner, is strikingly characteristic of Mr. Hunter, and shows the bias which determined the future career of his pupil.

"The affair being settled that young Mr. Physick was to study under him, the elder Mr. Physick said, 'Well, sir, I presume some books will be required for my son, I will thank you to mention them that I may get them.' 'Here, sir,' says Mr. Hunter, 'follow me; I will show the books your son has to study.' Mr. Hunter led the way from his study to his dissecting-room, and entering it pointed to several dead bodies; 'These are the books,' said he, 'which your son will learn under my direction; the others are fit for very little.' The impression made on the mind of Dr. Physick was durable;

he never forgot the remark, especially after committing to memory Cullen's First Lines, as he had done but a short time before in Philadelphia."

From this period forward, Dr. Physick seems to have read little of books, but, like his preceptor, to have relied upon his own personal observation in the dissecting-room, and at the bed side of the sick, for a knowledge of the nature and treatment of disease. Two years after entering upon his apprenticeship with Mr. Hunter, we find him elected house surgeon to St. George's Hospital, which post he obtained over a number of competitors, chiefly through the influence of Mr. Hunter. His success very naturally caused some dissatisfaction among the disappointed applicants, who conceived that their claims for the situation were stronger than those of the young foreigner.

"In consequence of this, Dr. Physick clearly perceived that they evinced an uncommon share of curiosity respecting the manner in which he discharged his duties, and that they were disposed to scrutinize his actions with the greatest strictness. A short period after commencing his services, a patient was admitted into the hospital who had had the misfortune to dislocate his shoulder; the head of the humerus was thrown downward, and loged in the axilla. Fortunately, the accident was quite recent. It so happened that at the time the man was admitted the whole class were in attendance at the house. They, of course, were exceedingly anxious to witness the manner in which the reduction would be effected, and Dr. Physick was perfectly well aware that his method of restoring the bone to its natural situation would be subjected to severe criticism. He directed the patient to be seated upon a high chair; he then proceeded to examine the injured shoulder very particularly, and questioned the man as to the manner in which the accident had occurred. Whilst making these inquiries he placed his left hand in the axilla, and taking hold of the lower end of the humerus with his right hand, he made all the extension in his power; he then suddenly depressed the elbow of the patient to the side of his body, and in so doing, dislodged the head of the bone, which glided in-

stantaneously into the glenoid cavity, very much to his own delight, and doubtless also to the perfect satisfaction of the class."—*Memoir, p. 24.*

In 1791 he received his diploma from the Royal College of Surgeons in London, and after spending a winter in the University of Edinburgh took the degree of Doctor of Medicine in 1792. So high an opinion had Mr. Hunter by this time conceived of his qualifications, that he invited him to take up his residence with him, to become an inmate of his house, and to establish himself permanently in London to pursue the practice of his profession. An apprehension that the climate and atmosphere of that city might injure his health, is said to have been the principal cause in determining him to decline so an advantageous an offer. Returning home the same year, he commenced the practice of physic in Philadelphia, with only two shillings and sixpence in his pocket. His father, having qualified him for usefulness and distinction, said to him, "My son, you have cost me much money; you have now an outfit, learn to take care of yourself." But with all his advantages, as well of person as of education, he was slow in getting into business, and was so discouraged after more than a year of fruitless probation, that he declared he would have sold the fee simple of his profession for a thousand pounds, have retired into the country, and never again have felt a pulse in the capacity of a physician. "I walked the pavements of Philadelphia," said he to Dr. Caldwell, "after my return from Europe, for nearly three years, without making as much by my practice as put soles on my shoes."* In this state of affairs he felt constrained to resort to the following expedient, which was the beginning of the great business to which he at length attained.

* Caldwell's Eulogy of Physick.

"Many of his hours," says Dr. Horner, "were spent, by invitation in a fine library belonging to a Mr. Priestman. He on one occasion said to Mr. P., 'I should feel much more happy, if I had something like a certain livelihood: if your family and some others would give me, at any rate, twenty dollars a year, each, for acting as their physician, I should be satisfied.' Mr. Priestman had a very high opinion of him and replied immediately, 'Well, Doctor, I agree to that:' and being a man of influence, he interested several other families in the same way."

After all, it is probable the Doctor indulged in a little pardonable exaggeration to his friend, Dr. Caldwell, in describing the difficulties attending his early practical career, since we find him in 1793, one year after his return from Europe, acting as physician to the Bush Hill Hospital, erected for the accommodation of indigent persons laboring under yellow fever, and one year later risen to be a prescribing physician in the Philadelphia Dispensary, and one of the surgeons to the Pennsylvania Hospital. It is true that these were offices of no immediate profit, but public confidence, according to one of his biographers, kept pace with this promotion, as was exhibited by his practice increasing with no ordinary rapidity. And after his second term of service at this Hospital, in 1798, his zeal and fidelity were recognized in the presentation of some elegant pieces of silver plate by the Board of Managers. Of the firmness and moral courage displayed by him in the midst of this epidemic; of the self-sacrificing spirit which animated him, in common with his medical brethren, whilst others were flying from the danger, the following anecdote related by Dr. Horner affords a striking example:

"Dr. Physick having offered his services, was chosen physician of the Bush Hill Hospital. He left his lodgings in town, entered immediately upon his new duties, and continued in the exercise of them till the disease had passed away. While on this duty, a disposition to insubordination and riot having

been exhibited by the inmates of the hospital, he was appointed alderman by Governor Mifflin, so as to meet any emergency with the promptest attention and vigor. An explanation of this civil magistracy may be given, by stating that such was the panic created by the yellow fever, that no ordinary civil officer could be found hardy enough, to enter the hospital to enforce order. 'I have repeatedly heard the Doctor say, that when he was sworn in by the Mayor (Matthew Clarkson,) the latter held off from the precincts of the hospital, and from Dr. Physick, at the greatest distance compatible with hearing, and was happy to be off as soon as possible, when the ceremony was over."

His constant exposure to the poison brought on an attack of the fever; and in 1797 he experienced a second attack, during which, it is stated by Dr. Rush, Dr. Dewees took from him one hundred and seventy-six ounces of blood. The disease brought him near to the grave.

"He told me," says Dr. Horner, "that, as he lay ill, he could hear through his windows, which were open, a stout blacksmith, who lived near, inquire daily of his black waiter, is your master dead yet?" To which the monotonous response of "No!" was as often given. When the Doctor recovered sufficiently to leave the house, he inquired after the blacksmith who had so frequently saluted his ears with this disagreeable question. He found that the blacksmith himself, had in the mean time been one of the victims of the epidemic."

He made many post mortem examinations during the prevalence of the epidemic, and arrived at the conclusion of which so much has since been made by Broussais, that yellow fever has its origin in gastritis. The establishment of the fact, that the disease was of an inflammatory character was a most important service for the profession, as it confirmed the superiority of the anti-phlogistic treatment over the opposite which had generally prevailed. It may be pronounced a great discovery, and it certainly confers no little renown upon

Dr. Physick that he was instrumental in bringing about one of the most salutary revolutions known in the history of practical medicine. Nor did he render a much less important service in contending with Dr. Caldwell, then, like himself a young practitioner in the city of Philadelphia, against the high authority of Dr. Rush, for the non-contagious character of this fever.

In 1797 was performed his first operation for stone in the bladder, which derives interest from the circumstance, that in making it his gorget divided the internal pudic artery. The hemorrhage from the wounded vessel was alarmingly profuse. Dr. Randolph describes his procedure in the emergency.

"He immediately compressed the trunk of the artery with the fore finger of his left hand, and then passed the point of a tenaculum under it, a ligature was then cast round it and firmly tied. This of course arrested the hemorrhage, but the ligature included along with the artery a considerable portion of the adjacent flesh. In order to obviate this inconvenience Dr. Physick subsequently contrived his celebrated forceps and needle for the purpose of carrying a ligature under the pudic artery."

He was married in 1800 to Miss Emlen, the daughter of a gentleman of learning, distinction and wealth, who belonged to the society of Friends. Mrs. Physick died in 1820, leaving four children, now alive—two sons and two daughters. In the same year, he was invited by a number of the medical students of the University of Pennsylvania to lecture to them on Surgery. He acceded to their wishes, and in doing so, how great he felt the resposibility to be, and how zealously he labored to acquit himself well, the following anecdote related by Dr. Randolph, will testify:

"After preparing the lecture introductory to his course, he committed it to memory. Among the persons invited to be

present at its delivery was his valued friend, Dr. Rush. The scene was a trying one to Dr. Physick. It was the first time he had ever publicly addressed an audience. At the close of the lecture, Dr. Rush stepped up to him and gave him his hand, and congratulated him upon his success. He then said to him emphatically, 'Doctor, that will do—that will do. You need not be apprehensive as to the result of your lecturing—I am sure you will succeed.' Dr. Physick never forgot Dr. Rush's kind manner to him on this occasion. He assured me that it exerted a considerable influence in strengthening and confirming his resolutions to persevere.

It was not until five years afterwards that he was called to the chair of Surgery in the University, to aid his friend Rush in carrying that school to a pitch of popularity which few institutions have exceeded. Dr. Randolph says:

"At the period when Dr. Physick commenced his professional career the organization of the medical department in the University of Pennsylvania was so imperfect, that the chairs of Anatomy and Surgery were combined, and the duties of teaching both branches devolved upon one Professor. In order to remedy this acknowledged deficiency, in the year 1805, the chair of Surgery was made distinct from that of Anatomy, and Dr. Physick was elected, I believe unanimously, Professor of Surgery."

In the mean time he had been elected Surgeon Extraordinary in the Philadelphia Alms House, and a member of the American Philosophical Society.

At this period of his life his habits were remarkably laborious.

"He has frequently told me," says Dr. Randolph, "that it was his custom, throughout the winter months, to rise at four o'clock in the morning. This hour being too early to disturb a servant, he was obliged to arrange his own fire. He would then sit down to his desk, and prepare his lecture for the day; after which he would dress himself, and then take his breakfast, and leave his house between eight and nine o'clock, in order to attend to a most extensive and laborious practice. In addition to this, he discharged his du-

ties as Surgeon to the Pennsylvania Hospital, and to the Alms House Infirmary. He used often to remark, that in order to obtain entire success as a practitioner of medicine, it was necessary to work hard. It will be conceded that no portion of his success ever came to him gratuitously; on the contrary, he made laborious exertions to obtain it."

In July, 1819, he resigned the chair of Surgery, and was appointed to that of Anatomy, made vacant in the preceding November by the death of Dr. Dorsey, his favorite nephew. We always regarded this transfer as an unfortunate one both for Dr. Physick and the institution, and we find that such were his own impressions, and those of his most intimate friends. Dr. Randolph says:

"It was always a source of deep regret with Dr. Physick's immediate family and friends, that his comforts in the evening of his days, and whilst laboring under physical infirmities, should be so greatly interrupted by translating him from the chair of Surgery to that of Anatomy. We had positive assurances from himself that the change was contrary to his own wishes and inclination."

In 1821, he was appointed Consulting Surgeon to the Institution for the Blind; in 1822, the Phrenological Society of Philadelphia elected him its President; he was chosen President of the Philadelphia Medical Society in 1824, which office he held to the time of his death; in 1825 he was appointed a Member of the Royal Academy of Medicine of France; and in 1831, he was unanimously elected *Emeritus* Professor of Surgery and Anatomy, having in consequence of declining health retired from the active duties of the University.

In October 1831, he performed the operation of lithotomy on Chief Justice Marshall. The following account of it by Dr. Randolph is interesting:

"The case was attended with singular interest, in consequence of the exalted position of the patient, his advanced age, and the circumstance of there being upward of one thousand calculi taken from his bladder. It is well known that for several years previous to this period, Dr. Physick had declined performing extensive surgical operations. He felt somewhat reluctant to operate on Chief Justice Marshall, and offered to place the case in my hands. Taking all the circumstances into consideration, and knowing well that this would be the last time that he would ever perform a similar operation, I felt desirous that he should finish with so distinguished an individual, and accordingly urged him to do it himself. Upon the day appointed, the Doctor performed the operation with his usual skill and dexterity. I do not think I ever saw him display greater neatness than on that occasion. The result of the operation was complete success."

His last operation was for cataract, which, from a record in his private Journal, seems also to have been his first. It was performed on the 13th of August, 1837, with a steady hand, while he was the subject himself of much mental and physical suffering. He never saw his patient after completing the operation, for the attack which terminated his laborious life occurred on the afternoon of the same day. On the morning of the 15th of December, at twenty minutes past 8 o'clock, the Father of American Surgery expired without a struggle. The immediate cause of his death was probably hydrothorax. For whole nights together he was unable to lie down in his bed, and was supported by assistants standing upon the floor. Anasarca was developed some time previous to his death, and in consequence of being obliged to stand so much upon his feet, his lower extremities became greatly swollen, the integuments gave way, and at length ulcerated and became gangrenous. He died in the 69th year of his age.

It is a little remarkable that he enjoined that no examination should be made of his body after death, and that a rigid

watch should be kept over it for six weeks, during the night, to prevent disinterment.

"So protracted an illness," remarks Dr. Horner, "attended with such suffering, impaired also the vigor and clearness of his mind, and exhibited it not unfrequently in strong contrast with its natural traits. He left a paper directing the disposition of his body after death, as follows: a dissection was absolutely prohibited, no one was to touch him but two females who had been his domestics, for the last twenty years. He was not to be taken from his bed for some time, but to be wrapt up in it warmly; the room was to be kept well warmed till putrefaction commenced. He was then to be covered with flannel, and placed in a wooden coffin, painted outside, with a mattress at the bottom; and this coffin was to be placed within a leaden one, and it soldered up closely. A public notice was to be given of the period of his interment, but no invitation issued."

Dr. Horner's description of his appearance in the prime of life is graphic, and will be read with pleasure:

"Five and twenty years ago, I saw him who is now a mass of decomposition, returning from the same place in the afternoon at the interment of Dr. Rush. He was then in the vigor of manhood and of reputation, the universally acknowledged centre and head of the surgery of this country. An indescribable interval separated him from every body else, and yet attracted every one to him. I remember with perfect distinctness, as he turned off from the ground, his quick and thoughtful step; his inclination of the head: as either musing on what he had seen, or ruminating on some case of profound interest then under his charge. His appearance such as in his most palmy days—his head highly powdered; his hair overhanging his ears in a thick long brush on each side, where it was clipped straight below. The head, face, and neck, exhibiting the most finished and statue-like appearance; and his costume being a paragon of neatness, and of appropriateness, without any undue effort at effect. I never saw him before or since more completely himself. The attack of typhus fever, which he had the next winter, altered sensibly for the remainder of his life, the face—the forehead never recovered its fullness."

As a teacher of surgery Dr. Physick acquired a wide popularity; for the lectures of one whose experience had been so diversified could not be otherwise than instructive, while his character for integrity and strict veracity caused all to be believed which he professed to have done or seen. His manner is described as having been eminently dignified, grave and impressive, without being what is styled eloquent. He seems to have had little imagination, and to have indulged it sparingly. But he was judicious and tasteful; his style was clear, comprehensive, simple and concise. He wrote his lectures out with care, never trusting himself in extemporaneous discourse. His choice of language is represented as having been happy; his person was fine, and his whole air striking and agreeable; from which qualities it resulted that he was a most pleasing as well as instructive teacher. He attempted no display of oratory, but spoke clearly and forcibly from the stores of his memory and the dictates of his sound understanding.

If he had no great veneration for the recorded experience and learning of the profession, he had less disposition to give to the public the results of his own observation and experience; and the student of a future day will search in vain through the medical literature of our country for evidences of that superiority which while living was universally conceded to him. A description of a few surgical instruments invented or improved by himself, and brief histories of a few cases cured by novel modes of treatment, make up the sum total of all that his pen has contributed to the profession. His fame will rest upon what he did—not upon what he wrote. He was one of the first to make post mortem examinations; he introduced the operation of passing a seton between the ends of bones remaining long ununited; he introduced the

animal ligature for arteries; he first recommended the use of blisters for the purpose of arresting the progress of mortification;—the excision of the uvula and of the tonsils in particular cases; the invention of several instruments, and the improvement of more—these are some of the achievements to which he was indebted for his great name. Y.

ART. VI.—*Elements of Pathological Anatomy;* illustrated by numerous engravings, etc. etc. By SAMUEL D. GROSS, M. D. Boston: 1839.

(*Continued from the October No.*)

OUR present number will finish what we have to say on the first part of this comprehensive work.

The second section of the chapter on heterologous formations, is devoted to melanosis. In classing this with those productions, our author has conformed to the prevailing arrangement of pathological anatomists; but, we must confess, that we do not clearly see the propriety of such an assignment. In fact it is made in violation of the great division of morbid structures, into those which are like, and those which are unlike, any of the existing tissues; inasmuch as the melanotic substance seems most closely to resemble, if not indeed to be identical with the brown or black pigment met with in some parts of the body, as a normal element—for example, in the rete mucosum of the negro, and in the choroid. Its

secretion and deposit where it should not be found is, at most, but an *error loci*, and cannot render it a heterologous production. Again—it can scarcely be denounced as malignant, as its history with a few exceptions, shows it to be destitute of the attributes which belong to that class of tumours. And these exceptions, it is probable, are but apparent, the melanotic secretion being, perhaps, associated with spongoid, carcinomatous or tuberculous action. The reference of the melanotic tumour to this or that class of morbid productions is not, however, a matter of much consequence; especially as no rule of practice is founded upon its classification.

In the six or eight pages which our author has devoted to melanosis, he has given to the student a lucid and comprehensive view of its natural, chemical and pathological history. It has been observed in several domestic animals. Professor Gross has seen it repeatedly in the ox, and others have met with it in the dog, cat, rabbit, rat, mouse, and some birds; but the horse has presented it more frequently than other animals, and in larger masses. White horses are oftener affected than those of any other color; a fact which seems to show, that the coloring matter of the skins of these animals, is developed in the blood, and not being deposited in its proper nidus is accumulated in masses in other parts.

In the human subject, it affects both sexes and all ages, but is far more frequent in the old than the young. In its chemical constitution, melanotic secretion bears much resemblance to black or venous blood; but offers in this respect considerable variety. In its physical characters, it also presents diversities of color and consistence; varying from brown to jet black, and from the consistence of ink to that of fibro-cartilage. When exposed to the action of the atmosphere it dries and becomes brittle. Now and then it is punctiform, or in

dots disseminated over, or rather in a membrane; and at other times it is lamellated; but its more common form is that of globoid masses, which are sometimes solitary, and at others aggravated. These masses generally have an envelope of cellular or serous-like membrane, giving them an encysted appearance. In the opinion of Professor Gross, they are never organized. They cannot be injected, and if they occasionally show the rudiments of a fibrous structure, it must be regarded as cellular substance into which the melanotic matter has been effused.

"When the tumour is developed on the serous surfaces, it frequently presents a pedunculated appearance, like certain polypi of the uterus and the vagina, (Pl. II, Fig. 2.) In such cases it is always surrounded by a distinct cyst, of which it is difficult to say whether it be a new formation, or simply an extension of the natural membrane. There is another variety of melanotic tumour in which the covering seems to be formed by condensed fibrin, effused, in all probability, in consequence of the irritation excited by the presence of the foreign matter. Sometimes the cyst is of considerable thickness, firmly connected with the circumjacent tissues, and furnished with minute vessels; generally, however, it is remarkably thin, soft, flocculent and without the least visible trace of organization. This variety of melanosis occurs most commonly in the liver and the brain. It is extremely rare. Carswell states that he never has seen an instance of it, and Laennec appears to have met with it only twice. I have noticed it several times in the liver of the ox."

The adipose and cellular tissues are most frequently the seats of this deposit. The organs in which it is oftenest found, are the lungs, ovaries and liver. Now and then it is so far a constitutional affection, as that it will appear simultaneously, or in rapid succession, in various parts of the body. This constitutes or indicates the melanotic diathesis of the systematic writers. Three opinions concerning the nature of this diathesis may be sustained. First, that the blood is in fault;

second, that the solids of the body generally have undergone a lesion of their vital properties, and the secretory function is thereby transformed; third, that a single organ has suffered such a lesion, and the others are affected sympathetically. Many facts are wanting to a satisfactory decision of these questions. Mean while we incline to the first opinion.

Of the remote causes which determine the production of melanosis we know very little. We have mentioned that the aged are most liable. A melancholic temperament favors its production. A sudden suppression of the catamenia has been followed by its development. Warm climates are said to present it oftener than cold. Finally, Dr. Hodgkin and Mr. Bransby Cooper have observed it in connexion with scorbutus.

"Melanotic tumors, after having acquired a certain size, generally remain stationary, giving rise to little or no inconvenience, save what results from their bulk and consequent pressure. At times, however, they manifest a disposition to ulcerate, and, when this happens, a most intractable sore is left, with hard, ragged edges, from the surface of which there is a constant discharge of black, inky matter, mixed with blood, pus, or a thin, fetid, ichorous fluid, formed by the surrounding structures. When removed, the most remarkable feature of these tumours is their tendency to re-appear in the neighborhood of the cicatrix, or in some remote organ."

In conclusion we may add that no remedy for melanosis, either topical or constitutional, has yet been discovered.

The third section of our author's chapter on heterologous formations, is devoted to scirrhus and cancer. We shall commence its analysis by transcribing his definition of the former, of which the latter is but a subsequent stage.

"How far the definition which we are about to give is free from objection, must be left to others to determine. Those who are acquainted with the difficulty of the subject will

agree with me at least, that any effort of the kind, although it may only be approximately correct, is much better than none. No lesion can be studied with advantage, unless the student have a proper notion of its nature at the very outset of his examination; and nowhere is this more true than in the disease before us. With these remarks, I proceed to define scirrhus to be a hard, crisp, opaque substance, of a light grayish color, with dull yellowish fibrous intersections, organized, liable to lancinating pain, occurring for the most part after the middle period of life, and passing sooner or later into ulceration."

Scirrhous matter sometimes appears on surfaces in layers, at other times it is infiltrated into a tissue, converting the whole into a lardaceous or pork-like appearance, but more commonly it is deposited in tuberoïd masses, which may vary exceedingly in size, before softening and ulceration take place.

We were lately consulted in two cases of cancer in the face. One, which had nearly destroyed the under lip, was preceded, for a long time, by a small hard scirrhus, which felt like a shot beneath the epithelium of the lip. The other appeared as a circumscribed, scaly, and indurated spot, in the skin of one of the temples. At the time of our inspection, the ulcerated surface was several inches in diameter, and the tuberous granulations of such magnitude, as to present the characters of a spongoïd disease. This patient, an aged man, had some time before placed himself under the care of a *cancer doctress*, who attempted and predicted its cure; but failing to accomplish the object, she changed her diagnosis, and declared that *it could not be cancer or her application would have cured it.* We mention the incident as a diagnostic of that empiricism, which has so firm a hold on the confidence of the victims of this deplorable malady. But a few months before, we had seen a still more revolting, because a more

advanced case of the same disease, in the Louisville Poor House, which, as the patient stated, began as a slight fissure of the lower lip. The mention of these cases reminds us, that all the examples of cancer of the lips and cheeks which we have ever seen, and the number has not been small, were in *men*, and that we have scarcely met with the disease in *women*, in any other parts than the breast and os tincæ. But to return from this digression, we shall extract from our author a paragraph on the most common of the different forms of scirrhus:

"In the tuberoïd variety, the most common, as we have already said, of all the heterologous substances, forms small circumscribed nodules, the number of which, as in the liver, is sometimes very great, and the consistence of which varies between fresh pork and fibro-cartilage. Their size and shape are much influenced by the nature of the tissues in which they are developed, and by the resistance which is offered to their progress. Single tumours of this kind are rounded, ovoïdal, or conical, when, on the contrary, several are agglomerated together, they are generally very irregular, angular, and more or less lobulated. In their size they vary from a mustard seed to an adult head,—their avarage volume being that of a billiard-ball, a lemon, or an orange."

Scirrhus exerts upon the skin a very different action from non-malignant encysted tumours, in becoming adherent to it, and at length giving it more or less of a puckered appearance. Previously to complete softening and ulceration, when examined, after being removed, scirrhous tumours sometimes contain hydatids, or coagula of blood, or cysts filled with gelatinoid or melicerous, or even purulent matter. In many cases, scirrhus presents an assemblage of lobulated masses, compacted together, but separated by processes of cellular or *quasi* serous membrane; the whole being surrounded by a capsule of the same kind, appearances which have led Dr. Hodgkin to the conclusion, that there is a close anatomical

resemblance between this disease and some varieties of encysted dropsy. The conclusions of this able pathologist and benevolent man have not, however, been generally adopted by the profession. The lobulated arrangement to which we have referred presents a considerable variety, which has given rise to the epithets mammary, pancreatic, gelatinoid, &c. These varieties result partly from the stage of the disease, and partly from the texture of the organ affected.

"Scirrhus rarely appears before the age of thirty, in which respect it strikingly differs from encephaloïd. It is much more common in women than in men, and its favorite period for attack is from the fortieth to the fiftieth year. Rarely, perhaps *never*, does it occur before the period of puberty. The lymphatic temperament is said to predispose to it, and in some instances it seems to be connected with a hereditary taint, being transmitted from parent to offspring. In the uterus, mammary gland, and testicle, it has been repeatedly observed in three or four members of the same family. Very often it supervenes upon external violence, such as a blow, kick, or bruise, syphilitic disease, suppression of the menses, and the repulsion of herpetic eruptions. In other cases, again—and these are very common—it arises without any assignable cause. Corroding cares, by impairing the general health, sometimes induce this disease; and, in the female, it is often dependent upon sympathetic action between the uterus and the breast."

Scirrhus often attacks a considerable number of organs at the same time or progressively, and most commonly, it is said, selects those of a glandular structure. If, however, by glandular structure be meant *a secreting* structure, we are not entirely prepared to acquiesce in the conclusion. The salivary glands are seldom affected, the lungs and kidneys which respectively secrete more, perhaps, than any other organs of the body, are equally exempt. On the other hand, however, the mammæ and testes are exceedingly common seats of this complaint. Our own observations would lead us to think the

liver is not often affected. We are almost disposed to say, that parts endowed with great sensibility and possessing much erectile tissue are peculiarly liable. This would at least be true of the lips, the stomach, the rectum, the cervix uteri, the mammæ and the testes; parts which are undoubtedly oftener the seats of scirrhus than all the other organs of the body.

Professor Gross, in contemplating the origin of scirrhus, inclines to the opinion of the distinguished Professor Carswell, that it begins with a deposit of lymph, which at length becomes organized, having two sets of vessels, one formed in the mass itself, the other derived from the surrounding arteries. We have already expressed our doubts of the validity of this theory; which, if adopted, explains only the origin of the primary nodule, and makes no provision for the *malignant* ulceration which follows on its softening; or for the lesion of the constitution, which constitutes the cancerous diathesis.

"After having existed for some time, varying from a few months to several years, the scirrhous matter manifests a disposition to become soft, the process by which this is effected, like that of tubercle, commencing at different parts of the diseased mass, from which it extends in various directions, until the whole or the greater portion of it is broken up and dissolved. Some authors have contended that the liquefaction invariably begins in the centre; but that this is not true, the writings of pathologists abundantly attest. The process, then, may commence at any point, at the centre or at the periphery, or simultaneously in both these situations; and, as it advances, the superincumbent integuments crack at one or more places, through which the softened matter, now of the aspect of encephaloid, jelly, syrup, gum, or honey, is ultimately discharged. Ulceration, however, it should be observed, often occurs in scirrhous tumours long before the internal disorganization in question is accomplished.

"A scirrhous ulcer possesses certain features which may be considered as characteristic. Generally, it is remarkably irregular in its shape, with a surface that is either cracked, fis-

sured, or fungous, of a dark reddish color, and of a peculiar glossy œdematous aspect. Soft cauliflower excresences sometimes sprout from it, so sensitive as to bleed on the slightest touch, or even of their own accord. The edges of the sore are of a reddish-gray color, elevated, everted, irregularly serrated, and harder in some places than in others, emitting more or less sanies on pressure. A deep excavation is occasionally formed, presenting the appearance as if a portion of the diseased mass had been lifted out of its bed. In cases which run their course very rapidly, the surface of the ulcer is frequently covered with a soft, grayish putrilage, of the most intolerable odor."

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"In this advanced state of the disease, the skin around the ulcer is of a purple color—from the overloaded state of its capillaries—hard, puckered, somewhat tender on pressure, and easily corroded by the irritating discharges. By degrees, the ulcer spreads, both in depth and in diameter, until at length the whole mass is involved in the disorganizing process, and the patient sinks under the exhausting hectic, caused by the profuse local discharges, and by the violent constitutional irritation. The lymphatic ganglions, it should be further stated, in the neighborhood, are almost constantly enlarged and indurated, and the tumour, instead of being moveable and circumscribed, as it was in the early stage of its growth, forms a hard, solid, undefined mass, which firmly adheres to the surrounding structures."

We come now to the last of the heterologous products recognized by our author—Encephaloïd;—the well known Fungus Hæmatodes of Mr. Hey, by whose interesting paper, this affection was first made known to most of our physicians. Other synonymes are spongoïd inflammation, soft cancer, medullary fungus, and medullary sarcoma. Such a multiplicity of names is not a little perplexing to the student of pathology and surgery. Of the whole, we prefer that imposed by Mr. Hey.

According to our author, this morbid structure may present itself under three aspects, the stratiform, the infiltrated and

the tuberous. The two former are rare—the last by no means uncommon, as every western practitioner can testify.

"In the tuberoïd variety, (Pl. IV, Fig. 1,) the heterologous matter appears in the form of a circumscribed tumour, from the size of a pea to that of a muskmelon. In its shape it is generally irregularly rounded, ovoïdal, or even quite flat, according to the amount of pressure that is exerted upon it by the surrounding parts; and, if it be examined by dissection, it will be found to be composed of different lobules, enveloped by a thin covering, and separated from each other by delicate membranous partitions. The outer covering, which is evidently formed out of the neighboring cellular tissue, is usually not more than half a line in thickness, easily torn, semi-transparent, and of a light rose color. From its inner surface are detached numerous processes, which, dipping into the morbid growth in various directions, form so many cavities for the reception of the new deposit. These septa, which are sometimes remarkably rough and shreddy, always become more obvious after the pulpy mass is squeezed out. The cells which they form by their intersections, are subject to much variety, and hence the peculiar lobulated shape which characterizes the morbid growth when occuring in parts that offer little or no obstacle to its extension.

"Although the covering of encephaloïd tumours is ordinarily derived from the pre-existing structures in their immediate vicinity, yet cases occasionally occur in which it is evidently of new formation. That this is true, my own dissections fully convince me. In such cases the external envelope is generally very thin; sometimes, indeed, almost like a film, easily lacerated, and of a grayish color, with rough, shreddy surfaces. The interior septa are likewise less perfect, and the whole mass is commonly so soft as to yield to the slighest force.

"The external envelope, together with the internal processes here described, is abundantly supplied with vessels which pervade the diseased mass in different directions, assist in its growth, and maintain its vitality. These vessels, which always consist of a much greater number of veins than of arteries, are often remarkably large and convoluted, and can be easily traced to the neighboring vascular trunks: their walls are exceedingly brittle, and the most trifling accident is therefore liable to be attended with an effusion of blood. Hence the dark clots which are so frequently met with in encephaloïd tu-

mours. The cerebriform substance itself, it should be stated, is easily squeezed out of its cavities, owing to its imperfect adhesion; and, intespersed through different parts of it, we frequently observe, besides the sanguineous deposits just adverted to, small cells filled with purulent matter, serum, or thin, sanious, and offensive fluid. In one case, I saw as much as half a pint of reddish serosity flow from a single cavity, the inner surface of which had a peculiar honeycomb-like appearance."

In the opinion of Andral the term fungus hæmatodes is, in fact, generic, and has been applied by different anatomists to very different morbid productions. One of them is a hypertrophy of the erectile tissue. The following are his remarks on this subject.

"When these vessels are thus increased in size, and therefore apparently in number, they sometimes undergo a peculiar modification in their texture, which gives rise to the formation of a tissue, for which I cannot find a better standard of comparison, than the structure of the spleen. In fact, we observe, just as in the spleen, numerous areolæ filled with blood, communicating freely with each other, and with large veins, the parietes of which, perforated in all directions, are divided at their termination, or rather origin, into simple filaments, losing themselves in the areolar tissue. In these veins and areolæ, the blood neither circulates nor stagnates, and in this way its quantity is exceedingly variable, and thus produces rapid changes in the consistence, form, and size of the tumour. In such cases, the blood not unfrequently escapes, and thus gives rise to copious hæmorrhages.

"The blood which is found in the areolæ presents the same varieties in its appearance, consistence and color, as the blood effused into the cells of the spleen; thus, in different tumours, or parts of the same tumour, it appears colorless, pale-red, greyish, like the lees of wine, or as black as the pigment of the choroid; it is perfectly fluid, of the consistence of currant jelly, or hard as a piece of muscle; sometimes it is impossible to separate it from the solids which invest it, sometimes it is easily removed by washing and pressure, the parenchyma in which it was contained then presenting exactly the appearance of a spongy texture: in all these respects it perfectly resembles the appearance and structure of the splenic parenchyma.

"Such is the morbid alteration which has been described under the various appellations of fungus hæmatodes, sanguineous tumour, and more recently *accidental erectile tissue.* In the midst of this vascular development, other lesions of nutrition or secretion may likewise occur; hence it is that in several tumours of fungus hæmatodes, there have been found, in addition to the peculiar anastomosis of vessels constituting its basis, different morbid productions, such as fibrous or scirrhous masses, pus, melanosis, &c. Similar tumours are, not uncommonly, formed in the cutaneous tissue, and more frequently still in the subcutaneous and intermuscular cellular tissue. They are also found in the mucous membranes and their subjacent tissues. Of all the parenchymatous organs, the testicle appears most liable to this disease, which constitutes in it one of the varieties of sarcocele. I recollect having seen, in the Hospital La Charite, a number of erectile tumours developed in the lungs of an individual, who had had one of his testicles removed several months before, in consequence of its being the seat of a tumour that was likewise of an erectile nature. The tumours in the lungs, five or six in number, were each about the size of a walnut: they were embedded in the substance of the lung, which was perfectly healthy all around them; and in the points they occupied, it looked exactly as if the parenchyma of the spleen had taken the place of the pulmonary structure. In another case, for the particulars of which I am indebted to Professor Marjolin, a tumour, perfectly resembling a portion of the spleen, was found in the brain of an individual, who, like the patient at La Charite, had also had one of his testicles removed for the same affection, as was ascertained on examining it after the operation."

True fungus hæmatodes is generally a disease of early life. Our author has seen it occur soon after birth, and we have lately met with a case in which it was congenital. We have also seen it in a patient upwards of fifty years old. Professor G. has met with it oftener in females than males; such, however, has not been our own experience.

"The most common seats of this morbid growth are the bones, eyes, testicles, liver, lungs, kidneys, uterus, lymphatic ganglions, and subcutaneous cellular tissue. In infants it often occupies the shoulder, the region of the clavicle, the side

of the chest, and the fore-arm. In adults I have seen a number of cases where it attacked the hand and fingers. Never have I observed it in the inferior extremities; but that it sometimes occurs here, the writings of pathologists abundantly testify. Encephaloïd has likewise been noticed in the veins, especially in those of the liver, of the kidney, and the uterus."

We have seen this malady attack the knee, the upper and inner part of the thigh, the soft parts about the ischium, the super-costal cellular substance between the axilla and the spine of the ilium, but above all the scapulary region which has seemed to us to be its favorite seat. But why this region should be more obnoxious than other cellular parts, we cannot tell. Since beginning this article, we have been consulted by a man whose case may be thus stated. He is thirty-one years of age, and by trade a cabinet-maker. About four years ago he discovered a small tumour in the right side, over the eleventh and twelfth ribs, which grew slowly for three years. Under exercise he felt some pain from the beginning, and tenderness on pressure. For the last year, he thinks it has rather decreased in size; but this is probably the result of the absorption of the healthy tissues in and around it. At this time it has an oval base, is but little elevated, feels knotted and corded within, and has formed attachments for the skin above, which is somewhat livid and marbled in its appearance, and exhibits many small varicose veins. From this tumour up to the shoulder there is a degree of fulness, which is quite perceptible to the eye when the patient is seen from behind. Indeed the scapula seems thrown outwards, and the sterno-spinal circuit of that side is an inch longer than the other. All round the margin of the scapula the parts are tender to the touch, and between that bone and the spine the pain has been such as to cause him to

apply an adhesive plaster. This pain is increased by the motion of the arm. The axillary ganglia are unaffected. We take this to be an incipient fungus hæmatodes.

We have met with but one case of this disease affecting the mamma, and then it had extended to that organ from the axilla and shoulder. We have twice been tempted to extirpate the eyeball disorganized by this malady. In the first instance, that of a child, it was associated with such a degree of ossification as rather to interfere with the progress of the knife. A fungus shot up rapidly from the socket, and the disease went to a fatal termination. In the other case, that of a woman near fifty years old, there were strong symptoms of reproduction, when she passed from under our care to a distant state, whence we have not heard the final issue. When lately at Zanesville, we were shewn by our friend, Dr. Rhodes, a testicle affected with this malady which he had extracted and the patient afterwards remained exempt.

The following is our author's account of the progress of this malady:

Encephaloïd disease, after having attained a certain development, may remain stationary for years, unaccompanied by the slightest uneasiness, until the part receive some injury, when it often grows with frightful rapidity. When seated in the subcutaneous cellular tissue, the tumour that is thus formed is at first quite movable, smooth on the surface, and devoid of sensation; but gradually, as the enlargement progresses, it becomes stationary, irregularly lobulated, elastic to the touch, and more or less painful. If allowed to proceed, the diseased mass has a tendency to open and protrude, generally by ulceration, sometimes by sloughing, and occasionally by the bursting of an abcess situated in its interior. In either case, the exposed surface presents a dark reddish fungous appearance, is highly sensitive, extremely vascular, very prone to hemorrhage, and constantly bathed with a thin, fetid, irritating, sanious fluid, the quantity of which is sometimes quite profuse. In many instances, pure blood is effused, caused by a rupture

of some of the vessels of the morbid growth; and this may be so obstinate and copious as gradually to destroy the patient. Occasionally there is a discharge of thin, glairy fluid, resembling the white of an egg. Such sores, besides being always highly disagreeable, never heal, from the inability of the parts to form healthy granulations. Sometimes the ulcerated mass sloughs as completely away as if it were dissected out; but these cases are uncommon, and are soon followed by a reproduction of the heterologous substance.

"Obstinate hemorrhage is most apt to occur in such tumours as are of the class to which Mr. Key applied the term fungus hæmatodes. In the eye, for example, much more frequently than elsewhere, the morbid growth, if it be permitted to go on unrestrained, is extremely prone to bleed. The reason of this is obvious. The diseased mass is almost always composed, in part, of a vascular, erectile tissue, interspersed with encephaloïd matter, and, as soon as ulceration sets in, hemorrhage, occasionally to an alarming and even fatal extent, is the consequence. The eroded surface, in these cases, is pale, livid, or mahogany color, and studded with large fungous excrescences, so grouped together as to resemble a cauliflower.

"In this advanced state of the disease, there is a rapid failure of the strength, the flesh wastes, the appetite declines, the patient is harassed with hectic fever, and the countenance assumes a peculiar yellowish, cadaverous hue. The lymphatic ganglions in the neighborhood meanwhile become enlarged, and converted into a substance resembling that of the original tumour. Two modes of explanation may be offered to account for this phenomenon. The one supposes that these bodies are effected merely sympathetically, in consequence of which their vessels pour out encephaloïd matter; the other, that this substance is carried to them by absorbing vessels coming from the affected part. Although this enlargement of the lymphatic ganglions seldom occurs before ulceration sets in, yet, in a few instances, I have known it to exist at an early period after the development of the heteroclite mass, a good while before the skin covering it manifested a disposition to give way."

We here close our analysis of the first part of Prof. Gross's Elements—that which treats of General Pathological Anatomy. The analysis of the second part will be commenced with our third volume. In thus continuing it through many successive numbers, our object is not so much to make known

the merits of this very excellent treatise, as to make it the occasion of a series of papers, designed to promote the study of pathology and pathological anatomy, in a region of country where these branches, particularly the latter, have not hitherto received the attention they deserve. For this purpose it seems to us peculiarly proper to employ as our text, a work written among those for whom we purvey, especially when we are compelled to regard it as superior to any other within their reach.

If we are not greatly misinformed the *alumni* of our Western Schools, and justice requires us to add of our Eastern likewise, have been seldom examined on morbid structure. A knowledge of healthy anatomy and of symptomatology has been demanded, but who can attempt to justify the omission of pathological anatomy? We trust that the day is not distant when the *onus* of our examinations will rest on that branch; and that a diploma will not be granted to one who is not as well acquainted with the morbid as the healthy structure of the body. D.

ART. VII.—*Transactions of the Medical Society of the State of New York.*—Parts II and III, Vol. IV.

The Medical Society of the State of New York is a legal organization of the medical profession, designed to protect the community against the impositions of unqualified practitioners, and to provide for the suitable education of those who aspire to the honorable but responsible office of healing the maladies of their fellow-citizens. And surely no object can be presented to the mind of an enlightened and patriotic

legislator, which should more powerfully enchain his attention, or more vigorously call forth all his energies for its attainment. Such an one must feel, after midnight vigils spent in devising remedies for the over-reaching of the avaricious and crafty, where dollars and cents alone are involved, that his solicitude would have been more worthily bestowed in guarding against the wiles of quackery, which filches not only the purse, but the health and lives of its dupes.

The State Medical Society of New York, which owes its existence to wise and provident legislation, is composed of delegates from county medical associations, that have each a corporate capacity, and are empowered by law to grant licenses to practice to such as have complied with specified conditions, and are found qualified after an examination by a board of censors. The County and State Societies hold regular meetings for the mutual improvement of their members, and to contribute their quota to the advancement of science. The State Society convenes annually at the capitol, in the month of February, and publishes, in the shape of *Transactions*, the avails of the systematic and stimulated labors of all within the limits of its jurisdiction.

Parts No. II and III of vol. IV, which are now before us, contain Addresses delivered on different occasions, and Essays on various subjects, together with abstracts of the Proceedings of the Society at its annual sessions in 1839, 1840. The following enumeration will convey an idea of their genral character:—1. *Annual Address on Quackery*, delivered before the Medical Society of the State of New York, February 6th, 1839, by Laurens Hull, M. D., President of the Society. 2. *Address on Spinal Disease*, delivered before the Tompkins County Medical Society in 1833, by Dr. A. Church, President of the Society. 3. *Address on Quackery*, delivered

before the Tompkins County Medical Society in 1834, by Dr. A. Church, President of the Society. 4. *Address on Medical Societies*, delivered before the Tompkins County Medical Society in 1835, by the late Daniel D. Page, M. D. President of the Society. 5. *Address on Observation and Attention*, delivered before the Tompkins County Medical Society in 1836, by the late Daniel D. Page, M. D., President of the Society. 6. *On Suicide and its Increase in the present day.* By John Ludw Casper, M. D., Professor in the University of Berlin, etc. Translated from the German by Horace. B. Webster. 7. *Statistics of the Medical Colleges of the United States.* By T. Romeyn Beck, M. D. 8. *Annual Address on Improvement in Medicine*, delivered before the Medical Society of the State of New York, February 5th, 1840. by Laurens Hull, M. D., President of the Society. 9. *Report of a Committee of the State Medical Society on the Subject of Medical Education.* Presented February 4th, 1840. 10. *On Diseases of the Spinal Column, their Causes, Diagnosis, History, and best mode of Treatment; being the* Prize Dissertation *for* 1840, by Nathan S. Davis, M. D., of Binghampton, Broome county, New York. "L'ami de nature." 11. *Address delivered before the* Chenango *County Medical Society*, October 8th, 1838, by Dr. Wm. D. Purple, President of the Society. 12. *Case of Sudden Death from Rupture of the Spermatic Vein.* By James M'Naughton, M. D., of Albany.

From this enumeration it will be seen, that the bill of fare offered us is sufficiently multifarious: we shall taste but few of its dishes at present, and are admonished by our limits to make a very temperate repast from even these. The *Report on Medical Education* by Drs. Beck, Manly and M'Call, is a very able and interesting document. It opens with a retro-

spect of the statutes which have been enacted, at different times, by the Legislature of New York, for the purpose of regulating the practice of Physic and Surgery in that Commonwealth. From the historical sketch the authors have drawn we gather that the evils of quackery claimed the attention of the Legislature at a very early period; that a series of acts were successively passed to insure competent qualification in those who should offer their services as practitioners of medicine; that the standard of qualification was gradually raised until the present system was established. According to its provisions, a student is required to study medicine four years with some physician and surgeon duly authorized by law to practice his profession, and at the end of his pupilage submit to an examination by a board of censors, before he can be allowed to practice, and no person is to be licensed until he has arrived at the age of twenty-one years. The law, however, admits the following exceptions; one year might be deducted from the term of study, provided the pupil had attended to *classical studies* for that period after the age of sixteen; and again, "*attendance on a complete course of lectures delivered by each of the professors, on all the branches of medical science in either* of *the medical colleges or institutions of this State or elsewhere,*" might be excepted in lieu of one year's study.

The design of the first of these exceptions, it is evident, is to hold out an inducement to students to acquire a proper preliminary education. The committee address themselves to the inquiry whether this is all that should be done to encourage preparatory education, and after comparing the medical with the legal and clerical profession, they arrive at the conclusion, that something more is necessary, and propose the requisition that the study of medicine be determined upon at

the age, say of sixteen, and that two years shall be devoted to classical studies, *or the higher branches of English studies equivalent to them.* Any feasible method of securing a proper amount of preliminary education to those who are destined for the medical profession, shall ever receive our hearty concurrence. The illiteracy of too many of those, who are thrusting themselves into our ranks, is a reproach and degradation to our profession, and has given currency to the belief that a dolt, who is too stupid for the bar or the pulpit, will do admirably well for medicine. But it does not occur to us that the object can be best attained by legal enactments; we should rather appeal to the *vis conservatrix* that is inherent in the profession itself, but has been shamefully permitted to slumber until our ranks exhibit a motley assemblage of ignorance and knowledge, talents and stupidity. How happens it that ministers of several denominations in this country are, as a class, better educated than physicians? Simply because the church has taken hold of the subject in the right spirit, and, under the conviction that a thorough course of training will augment the usefulness and respectability, nay, is indispensable to the success of the ministry, has prescribed a course of studies, to which all candidates are obliged to conform before they can be licensed to preach. In like manner, let our medical colleges exact a prescribed amount of attainments in classical learning and the higher branches of English studies, as a pre-requisite to graduation, and the work of purification will have been commenced, which, if faithfully persevered in, will eventuate in the restoration of the medical to its proper rank among the learned professions. We see no other remedy for the evil complained of. It is repugnant to the genius of our government, as it is to the temper and spirit of the governed, that the law should take cognizance of what may

as well be entrusted to the voluntary action of those who are chiefly interested. It is the interest of society to be protected against charlatanry, and it is therefore incumbent on the legislature to pass laws for its extermination; but those who are to pronounce on the qualification of candidates for license or graduation can best prescribe and enforce the course of studies, that shall be complied with, and they alone are the judges of the actual proficiency the pupil has made.

We have extended our remarks on this topic farther than we intended, and must turn to notice, very cursorily, two of the papers in the collection before us, which appear to possess the greatest practical interest; these are Dr. Church's *Address on Spinal Disease*, and Dr. Davis's *Essay on Diseases of the Spinal Column.*

Considering the extent and connexions of the spinal cord—running from one extremity of the trunk to the other, connected with the cerebral nerves and ganglionic system, and supplying nerves to the upper and lower extremities, indeed to almost the whole muscular system, Dr. Church is persuaded that it exercises a considerable influence over a great variety of diseases, and that it has been too much overlooked by physicians. While he acknowledges his indebtedness to the valuable little work of *Thomas Pridgen Teale*, for the first hints which he received respecting spinal diseases, Dr. Church claims to have successively treated a case on the principles laid down by that writer, just previous to the appearance of his treatise. The discovery of the nature of the case, he modestly avers, was rather the result of accident than of any sagacity of his. The case alluded to was that of a lady aged about 24 or 26 years, who was reported to have suffered from severe pulmonary inflammation for several

months previously, for which she had been bled repeatedly, and used other debilitating remedies.

"When I first saw her she scarcely complained of anything except debility, and occasionally a peculiar indescribable lassitude, which would suddenly come over her, when she was unable to support herself and was obliged to take to her bed where she was confined most of her time. On examination, the different functions appeared to be performed with the regularity of perfect health, pulse perfectly natural, tongue clear, appetite good, bowels and catamenia regular and skin natural. She complained of a tightness about the chest and a difficulty of breathing which occasionally came on in the evening and lasted for a short time and disappeared. I was inclined to attribute these symptoms to debility and accordingly prescribed tonics. After a trial of about ten days they had no effect whatever, and I was at a loss what to do. From some cause my attention was directed to the spine, on examining which, I found three of the dorsal vertebræ quite tender to the touch, and pressure upon them caused a stricture and tightness of the chest. I suspected this was in some way connected with the disease, if not a principal cause of it, and directed a blister to be applied to the part. I had the satisfaction to see the most decided relief result from this, and following it with the use of quinine and Dover's powders, together with tartar emetic ointment to the local affection for some time, the patient was restored to a tolerable state of health. I ought to have observed that during her convalescence, her feet and ankles swelled and became painful, attended with pain in the loins; this however, subsided without any particular treatment. I have conjectured that the case of this lady might have been originally an acute neuralgia of the chest, and not an inflammation. I have met with such cases in my practice and have generally found them very much relieved by bleeding, for a few hours, but the pain and stricture almost invariably return very soon, and if the bleeding is persisted in, or repeated often, the pain becomes aggravated at every repetition, until the patient is brought to the borders of the grave, and I have reason to believe that such treatment has proved fatal in more than one instance. When a delicate female, or any one in feeble health, is suddenly attacked with very acute pain of the side, if this pain is quickly relieved by bleeding, and returns again in a few hours after each bleeding, we ought to be extremely cautious lest we be imposed upon by the semblance of genuine inflammation, when nothing

but neuralgia is the cause of it, which is certainly aggravated by such depletion."

Dr. Church has met with a number of cases of disordered digestion, attended with soreness of the upper cervical vertebræ, which, he thought, had a very considerable influence over the disease, and sometimes seemed to be the principal cause of it. He relates the following very striking case:—

"A gentleman about forty-five years of age consulted me about two years ago, on account of a disordered state of the stomach, attended with a great deal of palpitation of the heart. He was greatly troubled with water-brash, tongue furred, bowels irregular, occasionally some fever. He had been troubled with the most of these sysmptoms for seven years, more particularly the palpitation and water-brash. When I first saw him the palpitation was alarming, and I had little doubt that he had an organic affection of the heart. I examined the cervical vertebræ, and found them very tender, particularly the upper ones. I concluded to adopt the plan of blistering the spine, together with alterative doses of blue pill, and a tonic of pulv. columbo. On seeing the patient two or three days after, I had the satisfaction of learning that the palpitation and water-brash had nearly disappeared immediately after the blister had drawn. His health rapidly improved from this time without interruption, exept an attack of ague and fever a short time afterwards, which was cured by quinine."

There is, he thinks, good reason to believe that sick-headache, which so often baffles every effort to cure or even to relieve it, is often an affection of the same part of the nervous system; he does not recollect an instance of habitual sick-headache, that has fallen under his observation, in which there was not soreness in the upper cervical vertebræ, and he has treated the complaint with blisters and irritants to the nape of the neck, obtaining thereby not only temporary relief but a radical cure.

We can add our testimony to the relief derived from irri-

tants, particularly sinapisms over the cervical vertebræ, in this distressing affection, although we have not pursued this method of treatment with a view to a radical cure, and cannot therefore pronounce upon its efficacy from observation. Three cases are related by Dr. Church, in illustration of the treatment recommended; the following is one of them:

"A married lady of twenty-six years of age, had been for several years severely afflicted with what she called the blind headache. It came on once in a few months, commencing with sickness of the stomach, headache and giddiness to such a degree, that she was obliged to remain in bed constantly, and every attempt to raise herself in bed induced blindness for the moment. The remedies formerly used had done but little to alleviate the complaint, and she had come to the conclusion there was no remedy for it. I accidentally saw her while confined with one of these attacks, and inquired into her symptoms, particularly whether there was any soreness in the neck. I found there was a great degree, and on particular inquiry learned of her that she was habitually subject to a slight stiffness of the neck, not however to such a degree as to excite much attention. Under these circumstances I strenuously recommended a blister to the nape of the neck, and without any other remedy the disorder abated immediately, and she was well of her complaint by the time the blister had healed. I deemed it advisable to use stimulating liniment to the neck for some time as a precaution against a return of it. This occurred two years and a half ago, and the complaint has never returned."

Dr. Church closes his Address with the rehearsal of three cases of rheumatism in which spinal irritation or inflammation existed, and in which cups, blisters and stimulating liniments appeared to afford considerable relief; but as these are not particularly striking and less satisfactory than some others that have been published, especially those of Dr. John K. Mitchell in the American Journal of Medical Sicences for August, 1833, we forbear to quote from them.

Dr. Davis' essay on diseases of the spinal column is a much

more elaborate production than that of Dr. Church; its scope, also, is more extensive, embracing not only irritation but inflammation of the spinal cord, and curvatures of the spinal column. It is in fact a monograph of the whole subject of spinal diseases, evidently prepared with care, and is a good digest of what has been written by the most esteemed authors, interspersed with some very interesting observations of his own. In the closing chapter of his essay, *on spinal irritation*, the only one which our limits will permit us to notice, the author very properly cautions against ascribing too wide a range to the morbid influences of this peculiar condition of the medulla spinalis,—which, according to some writers, is the first link, the grand starting point of every disease. To enforce this caution, he relates the following instructive case:

"Not long since I was called to visit a young lady who had been scarcely able to leave her room except in a carriage for four or five years. She was considerably emaciated, with a languid countenance, tongue rather *red* but moist, pulse languid and feeble, bowels generally slightly costive, sometimes relaxed, with frequent severe pain after indulging in too much food, appetite moderate, much pain along the course of the spine, and especially in the lumbar region, tenderness to pressure over the spinous processes of the inferior dorsal and upper lumbar vertebræ, great excitability, as well as debility of the whole system, with frequent palpitations of the heart, and a feeling of great languor and indisposition to exertion.

"This lady had been attended at different times, by a number of medical gentlemen, some of them of high standing in their profession. Her complaint had been considered one of general debility, *nervous irritation*, dyspepsia, or consumption.

"She had used accordingly and in succession tonics, chalybeates, dieting, very slight *frictions* with *tartar emetic ointment* over the *spine*, mercury to salivation, &c. She had once or twice resorted to the most celebrated watering places in our country, but all with no permanent benefit, and her health on the whole continued to fail, Not being satisfied

in regard to the nature of the pain in the back, I determined on making a more thorough examination. This was attended with some difficulty owing to the extreme delicacy of the patient. At length however, an old and experienced accoucheur, was permitted to make the desired examination.—And to *his* surprise "the os uteri was found low down in the vagina, and the fundus of the uterus thrown back toward the sacrum;" constituting a considerable degree of *prolapsus uteri* with partial *retroversion*. No cause for this displacement could be ascertained except the pernicious habit of *tight lacing*, and perhaps a little too free exercise in ascending a flight of stairs to take care of a sick relative, a short time previous to the commencement of her illness. And yet to any one acquainted with the extensive influence which this displacement exerts over the other organs of the system, it will afford an ample explanation of the preceding symptoms. And I scarcely need to add that the application of a proper mode of treatment, designed principally for remedying the uterine affection, has already afforded much relief."

Nevertheless Dr. Davis is well convinced that morbid irritability or irritation of the spinal cord may give rise to a great variety of distressing functional disorders in other organs, which will yield to no other treatment than counter-irritation over the spine. H. M.

Selections from American and Foreign Journals.

PH. RICORD *on the special treatment of Phimosis and Paraphimosis.* Translated from the French for the Western Journal of Medicine and Surgery, by BENJAMIN DENNIS, M. D., Cincinnati.

OF PHIMOSIS.

PHIMOSIS is complete or incomplete, permanent or temporary.

The permanent may be congenital or accidental, it may exist with excess in the length of the prepuce, with a prepuce not covering the entire gland, or with excess in the length of the frænum; it may have adherences to the gland, ancient or recent, complete or incomplete.

The temporary may be inflammatory or œdematous, complicated with erysipelas, with considerable tension, with gangrene, with inflammation of the gland, with blennorhagia, with chancres, with vegetations, with herpes, with perforation of the prepuce, with dysuria or ischuria. Before its development there might have been a slight narrowness of the prepuce, or to use a vulgar expression, the patient could only unsheath the penis with difficulty, the opening of the prepuce being very narrow.

Temporary phimosis, as its name indicates, happens in persons who, hitherto, found no difficulty in uncovering the penis, and yields without the necessity of an operation.

Permanent phimosis with excess in the length of the prepuce, or with induration of the circumference of that cutaneous envelope, demands circumcision, unless it is desired to remedy one deformity by creating another. When there are recent adhesions, easy to destroy, it is necessary to

dissect them; when they are too intimate and especially too much extended, the prepuce must be removed so as to free the meatus urinarius; when there is excess in the length of the frænum, the excision of it should be practised; if there are vegetations, they should be removed; if there are chancres, it is better, unless the indications are pressing, that they be cured before the operation, so that the danger of augmenting their extent by inoculating the wound resulting from the operation may be avoided. If the chancres still exist when the operation is practised, they should, as far as practicable, be included in the section. In this way the disease, which can only be local, may sometimes be entirely removed. If, however, some of the chancres still remain, they should be cauterized. When there are perforations of the prepuce, they should be included in the operation.

When the prepuce is short, the section of its superior part by the old method, may suffice. If the prepuce is only narrowed because of vegetations developed between it and the gland, a small incision will answer; in the contrary case, the incision should be carried to a level with the base of the gland. It is necessary to know, however, that even by the superior section, in making the excision of the angles, some patients are left with a strip of lengthened skin, corresponding to the frænum and constituting a true deformity.

In certain cases, I pinch up longitudinally a fold of the superior part of the prepuce, and remove thus a flap which leaves a division in the form of the letter V, the base of which corresponds to the verge of the prepuce, and the apex to the base of the gland.

As it regards the section of the inferior part of the prepuce, according to the method of Cecus, an operation that M. le Professeur Cloquet has revived and re-created by perfecting it, it is no more liable to wound the urethra, than the superior section. However, I reject it in most cases, especially in phimosis with excess in the length of the prepuce, for it gives place to a deformity in every respect similar to that observed in certain hypospadiœvi.

Giving then the preference to circumcision, this is the method that I employ.

First. The penis being in a state of relaxation, without drawing out the skin which forms the prepuce, I trace with ink, a line which follows in its entire circumference, the oblique direction of the base of the gland, and about two lines in advance of that base.

Second. This being done, I draw the prepuce forward and

fix it between the clamps of the dressing forceps, placed immemediately before the gland and behind the line traced by the ink, the direction of which they follow. The forceps are held by an assistant, the rings being on the side of the dorsal face of the penis, and not transversely as it has been advised in another method.

Third. The portion of the prepuce that protrudes beyond the clamps of the forceps is then seized with the fingers of the left hand of the operator, whilst the right armed with a straight bistoury, makes the section, following the oblique direction of the forceps, which placed before the gland, protects it and serves as a sort of guide to the bistoury.

Fourth. After this section, the mucous lining, which on account of its anatomical disposition, cannot be drawn forward like the the skin, remains entire upon the gland which it covers, and should be divided in order to avoid a secondary phimosis or paraphimosis.

In order to perform this part of the operation, I divide, at a single stroke with the scissors, this mucous lining upon the dorsal face of the gland and as far as its base; afterwards seizing, one after another, the flaps resulting from the division that I have just indicated, I practise the excision of each side, following the corona glandis as far as the fraenum; then at a single stroke, holding the two flaps united, I cut the fraenum, which I take away with them.

The consequences of circumcision according to my method, appear to me to be more favorable, than those resulting from any others; of this one may become convinced at the venerial hospital. The cure is usually accomplished in about twenty to twenty-five days; no deformity nor even a consecutive phimosis or paraphimosis ever resulting.

After the operation the artery of the frænum or some of the prepucial branches often bleed freely and should be twisted or ligatured. It is necessary afterward to keep the penis constantly covered with cold water, in order to avoid erections and inflammation. With the view also of preventing erections, pills of camphor are given to the patient.

The uninterrupted suture as a means of union offers no very great advantages.

OF PARAPHIMOSIS.

Paraphimosis, which is nothing else than phimosis carried behind the gland which it compresses, producing all the acci-

dents that may result from strangulation, requires that the parts be replaced in the normal relations.

When the constriction is not very considerable, a methodical compression will suffice for the reduction; in order to accomplish this, the penis should be enveloped in a compress saturated with cold water; it is then to be taken fully into the hands, and after sufficiently compressing it, the compression should be removed; then taking the penis into the left hand, the base of the gland is to be pressed by the fingers of the right, in order to make it enter the ring behind it which is formed by the prepuce. Another method consists in seizing the penis behind the constriction, between the indicatus and the medius of the two hands, whilst the thumbs compressing the sides of the gland, attempt to force the strangulated tissues over.

When there is œdema, it is necessary to practise punctures, thus disgorging the tissues, before attempting the reduction.

But whenever the strangulation is considerable, or when there are ulcerations of the constricted tissues, or adhesions, or inflammation of the gland, threatning, if not already producing gangrene, and further, when the paraphimosis has succeeded a phimosis;—to follow the common method of reducing it will serve only, amid the most poignant suffering excited by the bad management, to aggravate the difficulties already present, and in all cases to convert a paraphimosis into phimosis, which will afterwards require an operation.

In place of those multiplied incisions that have been advised, I make one upon the dorsal face of the penis which completely divides the skin, beginning at the point of the strangulation, and carrying it backward in length equal to that of the gland. This incision is made with a straight and narrow-bladed bistoury, which is glided under the skin, passing under the bridle which is formed behind the gland by the verge of the prepuce. In relation to the mucous lining of the prepuce, which produces in front of the constriction, an œdematous enlargement more or less firm, it should be completely divided in the same direction.

If I have been understood, the operation that I practice thus, is only the operation for phimosis by the superior part, carried behind the gland; consequently the consecutive cures are those of this last operation.

The Rain for nine years—The results of Meteorological observation are highly interesting and instructive. They be-

long to the scientific world, and should be thrown into the general treasury of knowledge to enrich those who love to draw from an exhaustless source. The superficial may see little to attract his attention in long columns of figures, but there are minds that find food for thought among these "husks" of philosophy.

The table below has been accurately calculated from the valuable Register long kept by the Rev. Dr. Allan.—It exhibits the result of nine years observation in reference to the amount of rain which has fallen monthly at Huntsville. The calculations appended may serve to assist the mind in grasping truth well nigh beyond its scope. If they chance to shake the credulity of any, with the data given, let them test their correctness. Table to be read as inches and thousandths.

	1831	1832	1833	1834	1835
January,	6,708	2,771	6,873	10,410	4,855
February,	2,344	3,456	11,451	8,242	3,186
March,	4,260	1,934	10,796	2,907	6,096
April,	4,156	5,540	4,900	3,332	12,303
May,	4,295	3,602	5,909	4,152	3,183
June,	4,656	2,147	7,996	1,162	6,372
July,	4,155	5,463	3,878	4,844	3,739
August,	4,567	6,653	2,494	7,060	10,256
September,	0,830	2,216	2,037	4,026	2,136
October,	1,651	4,711	3,820	5,849	1,667
November,	3,602	2,272	2,905	3,046	4,960
December,	2,217	5,567	4,605	7,620	1,523
Total,	43,441	47,332	67,664	63,240	60,276

	1836	1837	1838	1839
January,	4,848	1,523	5,226	2,631
February,	3,048	4,107	2,869	2,076
March,	5,817	5,316	3,185	4,001
April,	5,162	3,323	2,769	3,739
May,	6,532	2,492	4,017	1,937
June,	3,605	7,029	6,085	5,541
July,	8,403	1,662	3,948	2,636
August,	6,129	5,546	0,692	1,800
September,	1,246	4,015	3,190	2,221
October,	2,115	5,230	1,800	0,000
November,	1,384	3,052	9,124	0,227
December,	6,364	3,879	5,123	2,215
Total,	54,754	47,084	48,328	29,074

The average fall of rain for each of the last nine years has been fifty-one inches and one hundred and thirty-two thousands, (51,132.) It is interesting to compare this with the average of eleven years observations made at thirty-four different stations in the state of New York. As published in the American Almanac it is 35,150. The difference of latitude being 8 deg. and 15 sec. will give 1,938 as the increase in the fall of rain for every 69½ miles due south.

Southern Advocate.

THE WESTERN JOURNAL.

Vol. II.—No. XI.

LOUISVILLE, NOVEMBER 2, 1840.

SUMMER AND AUTUMN DISEASES OF 1840.

In one of our early numbers, we took occasion to call our readers attention to the fact, that the years 1838 and 39 had been uncommonly dry; but that 1840 up to the time (May) when we wrote had been rainy. As the summer and autumn, generally, have been wet, the year may be characterized as one of great humidity. In the article to which we have referred, it was suggested that a more favorable opportunity for estimating the comparative influence of dry and rainy seasons, would be furnished by these extremes, than was likely to occur again very soon.

We now ask, in what respects have the summer and autumnal diseases of the present year, differed from those of the two preceding? This question ought to be answered, and can be answered better at this time than hereafter, for memorandum books never become more copious, nor memories more accurate by time.

In our travels, for medical observation, in the State of Ohio, we have ascertained that the towns have been more healthy than the country; and, while the latter has not suffered any great *mortality*,

intermittent and remittent fevers have had rather an extensive prevalence. Again we respectfully and earnestly solicit from our brethren a state of their observations on these and our other summer and fall endemics. D.

SCARLET FEVER.

It is worthy of being noted, that this foreigner seems, in fact, to have become naturalized among us—though it has not made a special "location." In past times it appeared as an occasional epidemic; but in these latter days it has been sojourning among our towns and neighborhoods,—now here and now there, sometimes mild, sometimes malignant, generally the former with as much quiet composure as one of our own veritable endemics. Such a gentle but protracted invasion would seem to afford many opportunities for studying its mode of dissemination, the means by which it destroys life, and the measures by which it may be successfully countervailed. We are sorry to find, however, that the profession are every where divided on these different points. Some cry out for—others against contagion: some stand up for acute inflammation and a liberal use of antiphlogistics—others stimulate throughout the whole course of the disease. Finally others do nothing. Each party has a certain number of facts to offer in support of their opinions, and seem little disposed to open their eyes to an examination of any others. In the midst of this great contrariety, but three truths are perceptible: first, that scarlatina *will* run its course; second that, when mild in character, the patient lives under *any* plan of treatment; third, that when malignant he dies *whatever* remedies may be employed. Such at least are our impressions, but we shall be most happy to publish evidences that the last is untrue. D.

COW-POX.

It is melancholy to observe the apathy which prevails among the people and the profession, on the subject of vaccination. Such neglect deserves the severest rebuke. Thousands are growing up in

the West, without being protected against small pox, although protection is so entirely within the reach of every individual from the cabin to the mansion. Verily, we are negligent people, in every thing but trade and politics. When the presidential election is over, it is to be hoped, we shall find time to get our children vaccinated.

D.

LICKING COUNTY MEDICAL AND PHILOSPHICAL SOCIETY.

We lately had the pleasure of attending one of the meetings of a new scientific association at Newark, Ohio, under the above title; and are indebted to Dr. Marble, one of its members, for an account of its organization and objects. In contemplates the cultivation of mineralogy, geology, chemistry and Botany, in connexion with medicine, and provides for admitting as members, gentlemen who are not of the medical profession. It looks to the establishment of a museum, the delivery of lectures and essays, and the gradual formation of a library. Some of the members have a number of specimens of pathological anatomy and comparative anatomy which will be made the basis of a cabinet of that kind. It is expected to have courses of lectures to which the community at large will be admitted.

The Society consists of four classes of members. 1st. *Senior members*, consisting exclusively of physicians. 2d. *Junior members*, consisting of students of medicine. 3d. *Active honorary members*, residing near enough to participate in the regular meetings of the Society. 4th. *Honorary members*, residing at a distance.

The Society elects its officers annually and holds regular quarterly meetings. The following are the officers, for the present year:

John I. Brice, *President;* Daniel Marble, *Vice President;* Dr. J. N. M'Millan, *Recording Secretary;* A. O. Blair, *Treasurer;* D. Marble and J. Dille, *Corresponding Committee;* Edward Stansberry, John M. Wilson, D. Marble, A. O. Blair, E. F. Bryan, *Censors;* F. B. Parmele, V. H. Roe, A. D. Bigelow, and J. Dille, *Curators.*

We wish our Newark friends, in this praiseworthy effort to promote the cultivation not only of medicine but its associate sciences.

D.

GREEN COUNTY MEDICAL SOCIETY.

The physicians of Green county, Ohio, in 1839, formed themselves into a society under this style. The officers for the present year are Dr. Matthias Winans, President; Dr. Joshua Martin, Vice President; Dr. J. J. M'Illhenny, Recording Secretary; Dr. John Dawson, Corresponding Secretary; Dr. Joseph Templeton, Librarian; Dr. James Cummings, Treasurer.

At each meeting a person is appointed to read a dissertation at the next; and it is expected that every member of the society, will report all the important cases which occur in his practice. These reports may be made either in writing or orally; and are liable to critical examination. They are, indeed, themes for discussion; and exercises thus gotten up, cannot fail to be eminently useful.

The Society has adopted a system of rules and regulations for the government of its members in their professional intercourse with one another, and also a fee bill, designed to produce uniformity of deportment and charging.

Should Societies of this kind be organized in all the counties of the West, their influence would prove salutary in the highest degree to the character and interests of the profession.

The Green County Society holds its meetings in the town of Xenia. D.

A PIN RETAINED IN PHE BODY NINETEEN YEARS AND THEN DISCHARGED.

We are indebted to Dr. Darius Maxon, of Gallipolis, Ohio, for the following fact, which presented itself in his practice a few weeks since.

Nineteen years ago a lady swallowed a pin, which was followed by symptoms of aggravated dyspepsia. For several days before it was discharged she was affected with a pain in her left side for which the Doctor applied an antimonial plaster, that produced pimples, through one of which the pin made its exit. A slight discharge of bloody serum followed. The pin was considerably coated and its head removed to its middle. D.

AMERICAN PHILOSOPHICAL SOCIETY.

Among the proceedings of this Society for May, June, and July, of the present year, a copy of which we have received, we find some interesting remarks on tornadoes, from which the following extracts are made:

"Dr. Hare adverted to the fact, that in an essay, published in Silliman's Journal in 1822, he had, agreeably to the authority of Dalton and Davy, stated, that the cold consequent on the rarefaction of air in its ascent towards the upper strata of the atmosphere was one of the causes of the formation of clouds; and in his text books he had soon after published an engraving of an apparatus, by means of which he was accustomed to illustrate, before his pupils the transient cloud which arises from a diminution of pressure in air containing aqueous vapour.

"In the essay above mentioned, Dr. Hare had alleged, that as much caloric was given out by aqueous vapour, during its conversion into snow, as would be yielded by twice the weight of red-hot powdered glass. But Mr. Espy, he considered, had the merit of being the first to suggest, that the heat, thus envolved, might be an important instrument in causing a buoyancy tending to accelerate any upward current of warm moist air.

"Dr. Hare had been willing to admit, that this transfer of heat might co-operate with other causes in the production of storms, but could not concur with Mr. Espy in considering it competent to give rise to thunder gusts, tornadoes or hurricanes. These he had considered, and still considers, to be mainly owing to electoral discharges between the earth and the sky; or between one mass of another."

"Professor Bache read an extract of a letter addressed by Mr. Forshey, of Natchez, to Mr. Espy, in reference to the tornado which occurred there recently.

"The writer stated that he had spent much time in examining the track of the storm in the vicinity of Natchez. He had ascertained its extent to have been not less than five or six miles below the city, and twenty miles beyond; its effects having been felt, but with less violence, for nearly one hundred and fifty miles. The track near Natchez was directed sixty degrees to the east of north. After describing the destruction of the city of Natchez, the writer states, that objects were every where blown towards the track of the storm; those directed most westwardly lying invariably below those directed more eastwardly. Mr. Forshey also describes the effect upon the houses as of an explosion outwards. In his view, these facts strongly confirm Mr. Espy's theory of this meteor."

"Mr. Walker made some remarks on the tornado, of limited extent, which visited Philadelphia on the 13th instant.

"Mr. Walker's own observations, and those of several intelligent individuals, on different sides of the central path, led him to the conclusion, that the currents from without the borders of the tornado were directed, in every instance, towards its centre. This was mani-

fest from the motion of the clouds, in the different strata of the atmosphere. The theory of the central tendency of the currents in tornadoes, usually ascribed to Mr. Espy, was, Mr. Walker remarked, of older date, having been advanced by Franklin in the middle of the last century. The whirl, on which so much stress is laid by Mr. Redfield and Colonel Reid, was distinctly seen in the lower current, where the condensed vapor, resembling spent steam, moved round in a spiral, making several turns downwards, each of smaller dimensions than the preceding, and resembling the motion of water in a common whirlpool. This circumstance seemed, to Mr. Walker, somewhat contradictory to part of Mr. Redfield's theory, that of the gradual enlarge of the periphery of the whirl, whereas the motion in the present instance was in a spiral tending inwards." Y.

MEDICAL SOCIETY OF TENNESSEE.

This Society at its meeting in May offered a premium of fifty dollars for the best Essay on *Bilious Fever*, to be submitted under the following circumstances:

"Dissertations on this subject must be transmitted, post paid, to Samuel Hogg, M. D., Nashville, Tennessee, on or before the 1st Monday in March, 1841.

"Each Dissertation must be accompanied with a sealed packet, on which shall be written some device or sentence, and within shall be endorsed the author's name and place of residence. The same device or sentence is to be written on the dissertation to which the packet is attached.

"All unsuccessful dissertations are deposited with the Corresponding Secretary of the Society, from whom they may be obtained if called for within one year after they have been received."

The Committee appointed to read the Dissertations and award the prize, consists of Drs. Felix Robertson, Thomas R. Jennings, and J. H. Atkinson, of Nashville. Y.

LOUISVILLE MEDICAL INSTITUTE.

The Clinical Lecture-Room, of which we made mention, in our last number, as promising to add materially to the means of instruction already in possession of the Faculty of the Medical Institute, is now fully completed, and will be used by the Professors of Clinical Medicine and Surgery during the approaching term. The apartment is spacious enough to accommodate four hundred students, all of whom by the favorable arrangement of the seats will have a full view of patients undergoing examinations and operations.

The number of students now in the city authorises the belief, that the Class this season will be as large as that of the last. Y.

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THE

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DECEMBER, 1840.

ART. I.—*Remarks on Negro Consumption.* By A. H. BUCHANAN, M. D., of Columbia, Tennessee.

THERE prevails a disease in Tennessee known as Negro Consumption, which annually proves destructive to many of our black population. The character of this disease is by no means generally understood, and we are frequently asked, what is the nature of this malady? Is it peculiar to the negro? Why is it called "*Negro* Consumption," &c.? Not long since in consequence of this name, "negro consumption," not being known in the books as designating any known

affection, we were called on for our deposition in a medico-legal point of view, touching the nature of this disease, in a case involving property to some amount. The following are some of the questions put by the attorney: What is negro consumption? What are the symptoms by which you judge of the existence of this disease? Is it peculiar to the negro? Is it the same kind of disease known by the name of phthisis pulmonalis, or consumption among the whites? What causes produce the disease? Is it a curable affection? &c. &c. Now all of these questions, according to the answers given, it can readily be seen, an ingenious lawyer might wield with great effect in his pleadings. But it so happened in the above case that the parties came to a compromise, and we were spared from any further questioning. I shall endeavor however to answer some of these questions, with a view of defining our meaning of the term "negro consumption;" and to describe its nature, shall also give the pathological appearances of some of the cases that have come under my observation. By negro consumption we mean a scrofulous affection which is principally fixed upon the deep seated lymphatic glands, the viscera of the thorax and abdomen, and upon the serous membranes lining these cavities; it is rarely the case that the superficial lymphatic glands of the neck, axilla or groin, are affected in this disease, and we are hence not often aided in our diagnosis by an examination of these parts. The disease consists essentially in an extensive tubercular disorganization of the viscera of the thorax and abdomen. The symptoms of this disease are not very prominent, but to one who has been in the habit of observing the general appearance and movement of those affected with it, they are sufficiently so to characterize it; and towards its close with much certainty. In the commencement, however, the symptoms are particu-

larly obscure and doubtful, so much so, that the individual himself scarcely recognizes any alteration in his feelings. He has sufficient appetite, and performs his usual daily labor, and except for a sense of languor and debility, and some slight uneasiness in the chest and abdomen, he feels so well that he would make no complaint. But these symptoms gradually increase, perhaps for several weeks, when his spirits become affected, and with a dull inanimate countenance he still lingers on at work, performing his task with great difficulty: he now begins to attract his master's attention, and he is sent to his cabin, where he remains for several days without exciting any uneasiness about his recovery, for he eats heartily and does not complain except of some slight pain in his chest and abdomen, of weakness and of shortness of breath; but he is entirely unable to work, and has taken up the idea that he is poisoned, (and hence the name of "negro poison,") for it is an idea that invariably infests the minds of all those whom I have examined, whose age renders them capable of reflection. The master also is not unfrequently impressed with the same opinion, and attributes his disease to some article of a poisonous nature administered by a neighboring enemy. It is about this period of the complaint that the physician is sent for; or, as is often the case, that the patient is sent to the physician, and it is now that we can recognize the complaint at once; the symptoms have become sufficiently marked and decided to characterize it with great certainty. The skin is dry and ashy, and the countenance desponding. There is great muscular debility and inactivity, with slight emaciation, and always more or less pain in the chest and abdomen, accompanied with difficult respiration, or as they forcibly express it, "shortness of breath;" this last symptom is particularly manifest if they are hurried out of a walk, or caused to

ascend a flight of stairs or other ascent. The tongue is generally pale and covered with a whitish fur, though seldom thickly coated; the pulse, if examined while the patient is in an erect position, is quick, hurried, and somewhat tremulous; in the sitting position much more natural; if the patient is made to walk to and fro quickly, the pulse is very much agitated, quick and tremulous; and the heart is often felt to throb and beat with force against the ribs, while the patient literally pants for breath. In some instances the sclerotica may now be observed to be of a pearly whiteness; the appetite remains good, and sometimes even voracious to the very last; the bowels are readily acted upon by medicines, and sometimes they are troubled with diarrhœa, particularly towards the close of the disease; in some instances there is a slight hacking cough with slight expectoration of mucus, and preternatural heat of the skin, with a slight febrile action of the pulse. In the last stages of the complaint, a dropsical effusion takes place into the cavities of the chest and abdomen, and not unfrequently in the pericardium, and sometimes extends to the lower extremities. In some instances this dropsical affection occurs earlier in the complaint. The patient at this time and even before, is particularly prone to sit for hours together, doubled up and leaning forwards with the elbows resting upon the knees, or the elbow upon the knee supporting the head, and to the last hour of life most of these patients prefer the sitting position. The next question, "Is this disease peculiar to the negro?" I unhesitatingly answered no; because I regard it as a scrofulous or tuberculous affection to which all the human race, as well as various other animals, as the horse, ox, sheep, birds, and even insects, are liable: but certainly the black race is much more predisposed to that form of the disease which produces the above symp-

toms than our white population; so much so, that among us it has taken the peculiar name of "negro consumption;" and I am certain that until very lately, I have never met with a case among our white population that fully characterized this complaint. That scrofulous affection which is principally confined to the mesenteric glands and called *tabes mesenterica*, I have occasionally met with in our white race, as well as that called *king's evil* which principally shews itself in the superficial lymphatic glands, and also other scrofulous affections, as of the joints, eye, &c. But that deep seated and extensive scrofula of all the vital organs of the great splanchnic cavities which is so common and fatal among our black population—sparing neither age nor sex, and in some instances carrying off whole families in a few months, is rarely met with among the white race. This disease, therefore, though not peculiar to the black ruce, is perhaps with sufficient propriety called "negro consumption."

"Is it the same kind of disease known by the name of phthisis pulmonalis or consumption among the whites?" This question cannot be so positively answered; it is one upon which the most learned pathologists have differed and still differ. The question in another shape is, "are all tubercular diseases of the same nature" In the disease above mentioned, (as will be shown presently,) we have that diseased condition of the lymphatic glands which is called scrofula, and that condition of the lungs, liver, spleen, &c. which is called tuberculous disease, and therefore two diseases; or else what Dr. Duncan, Parr and others affirm on this subject must be true—"That each tubercle is a lymphatic gland in a diseased state, the consequence of scrofula;" and we have but one disease, namely, scrofula. Or else, if we have two diseases, they co-exist, increase and disorganize in the same

manner, and at the same time, different organs and tissues of the same individual, by a peculiar *deposition* the physical properties of which, when examined from a lymphatic gland, cannot be distinguished from those taken from another organ either by the anatomist or chemist. Such being the fact, it is fair to conclude that the same kind of diseased action, which produced the deposition in the lymphatic gland, also produced it in the other organs and tissues; and therefore, that in the disease under consideration, where the same appearances of destructive disorganization occur simultaneously in the lymphatic glands, lungs, liver, spleen, and in the serous, mucous and cellular tissues, all such appearances are produced in each of the organs and tissues by the same disease, whether it be called tuberculous or scrofulous. If then these affections are identical in the black man, they must be so in the white man, and if the same in one that they are in the other, they must be the same in each, wherefore I must believe that the "negro consumption" is the same kind of disease, called tubercular phthisis or consumption in the white man.

I am aware that I have but expressed the opinion of very many of the most distinguished pathologists, in the above conclusion as to the identity of scrofulous and tubercular diseases. The following extract from a "Treatise on tubercular phthisis," by Dr. James Clark, expresses the opinion of the majority of modern pathologists on this subject: "From remote antiquity to the present day, the disease of which the present matter (tubercular) constitutes the destructive anatomical character, has received different names according to the development in particular organs and tissues. In the external glands and in the bones it is commonly called scrofula; in the lungs, phthisis; and in the glands of the mesen-

tery tabes mesenterica, &c. The identity of these affections was only suspected by the ancients from the similarity of the general symptoms, but has been demonstrated by the moderns on the clear evidence of morbid anatomy; an increased attention to which science and the study of the causes of the disease has led pathologists to entertain more accurate opinions, and more comprehensive views regarding it." But notwithstanding these sentiments it is well known, that this is by no means a settled point in pathology, and that many of the most intelligent entertain different views, and regard it as extremely difficult, if not impossible to "identify the tuberculous with the scrofulous diathesis;" (Morton, Phila.,) but let this be so, and still the identity of "negro consumption" and tubercular phthisis, cannot be denied, for we have the same kind of tubercular disorganization of the lungs in both cases.

The next question, "What causes produce the disease?" necessarily gives rise to another; Is the disease hereditary? I believe that it is; first, because I know of some instances, and have heard of others, where all the members of the same family have perished of this affection, while the remainder of the slaves on the same plantation have escaped, notwithstanding they were exposed to the influence of the same circumstances, fed, clad, worked, and otherwise treated in the same manner, and exposed to the same weather. Second, because I believe it is of the same nature of tubercular phthisis, which all the world admits to be hereditary. An hereditary disposition, or constitutional cachexy therefore, we regard as the principal predisposing cause of the disease; and as to the question, also asked, "Does the disease ever originate in an individual who is not predisposed at birth?" I am of opinion that it does, or at least that it may; for according to Dr. Clark the predisposition "may be acquired at any pe-

riod of life, from infancy to advanced old age" by the long continued operation of all those circumstances, "which debilitate and increase the irritability of the system, impede the due digestion and assimilation of the food, diminish the various secretions and excretions, and increase internal sanguineous congestion." But whether this predisposition exists as an inheritance from birth, or is acquired in the course of life, it is well known that it is not deemed by all as essential to the development of tubercles. Broussais and his followers, and many of the most distinguished pathologists of the present day, among whom stands conspicuous Professor Gross, of Louisville, believe that chronic irritation or inflammation may produce tubercles, in any of the tissues or in any individual, however sound may be his constitution at the commencement of diseased action; but of course where the predisposition exists the disease is much more readily produced by the operation of any of the exciting causes, and I am therefore fully sustained in the opinion, (by both sets of pathologists,) that the disease may originate in any individual.

The exciting causes of this disease are numerous, and are in general all those which are enumerated in the books as exciting causes of phthisis; but of all these the most operative in the production of this complaint is exposure to cold, to damp and variable weather. This I infer from the fact, that our black population are well fed on wholesome food, and get enough, *at least*, of the light and heat of the sun, and of pure air to prevent the formation of tubercles; but they are not in general sufficiently clothed to resist the depressing influence of extreme cold, and the sudden changes of weather to which they are almost constantly exposed. In a climate like ours, in Tennessee, where the vicissitudes of temperature are so sudden and so great as not unfrequently to produce a range

in the thermometer of 40 and 50 degrees in a day; and where the winds with equal uncertainty shift from the gentle and relaxing breeze of the south, to the freezing and benumbing blasts from the north; and where the bright blue skies and cheering sun are suddenly obscured by clouds, and heavy and repeated rains for days together to the amount of six, eight, and even ten inches per month, as has been the case this season, producing a heavy humid atmosphere for weeks at a time; where all these changes are thus constantly going on, it is evident that the clothing should be adapted to the changes of the weather. But what is the fact? The negro has but one suit of clothing at a time, and with this while it lasts he meets all the various changes that may occur in the humidity or temperature of the atmosphere, and whether it be in the summer season or the winter season, he never dreams of flannel next his skin, or over-shoes, nor muffles up in his cloak, to protect himself from the frosts and chilling blasts of winter; but with his cotton shirt and linsey roundabout and drawers he buffets all the storms of the season. Who, therefore, among us can doubt the exciting cause of negro consumption? A race whose congenial clime is upon the burning coasts of Africa, and who delight to bask in the rays of a meridian sun, to be thus exposed in a climate unsuited to their nature, and with a high susceptibility to the influence of *cold*, must of necessity fall victims to its influence.

We come now to the next and last question of our attorney, "Is it a curable affection?" We answer, No!—it is a perfect approbium medicinæ. In the form of tubercular consumption, it carries off one-fourth part of the inhabitants of all Europe, (Dr. Young,) and the annual victims to its ravages in Great Britain alone, was estimated by Dr. Woolcombe at fifty-five thousand, and even in our own happy country,

one-fifth of the mortality of our large cities is produced by it. (Emerson.) Go therefore, clothe your negroes better and take more care of them, and *you* may *prevent* what *we* cannot *cure*. Thus we would speak to the owners of slaves.

In the course of the last five or six years we have had the opportunity of making autopsical examinations of sixteen cases of this disease, the pathological appearances in all of which were remarkably similar. In the first case, of a negro woman aged about 25 years, the head was not examined. Thorax—Immediately below the sternum I observed several small glands filled with crude tuberculous matter. The left lung was firmly united to the side from apex to base by granulated adhesions of the opposite surfaces of the pleura. On incising the lung in different places we found it perfectly disorganized by tubercles in various stages of development. Small abscesses, granules and crude tubercular matter occupied all its substance; right lung firmly adherent in places, and the pleura and lung filled with tubercles; the left pericardium distended with serum; the heart rather soft and flabby. Abdomen.—On opening the abdomen I found the opposite surfaces of the peritoneum cemented together, highly inflamed and filled with tubercles; the intestines united by adhesions of false membrane filled with tubercles; the mesenteric glands greatly enlarged and filled with crude tuberculous matter. Liver—some small tubercles upon its peritoneal surface and in its substance. Spleen—several tubercles on its surface and two large abcesses in its substance. Kidneys contained tubercles. This woman sat up, and even walked about until the evening before she died; she ate cabbage and such other articles of diet for dinner, and went to bed as well as usual in the evening, but next morning was found dead in her bed. On opening the stomach it appeared sound

and contained several articles of diet in a half digested state. I will here remark that in four instances of this disease, to my knowledge, death occurred in the same sudden and unexpected manner. One of these cases I examined, and found, in addition to the usual extensive tubercular deposits in the viscera of the thorax and abdomen, a highly diseased condition of the heart. The pericardium was filled with a reddish serum. The external surface of the heart had the appearance of being blistered, and around the apex was coagulable lymph of recent deposit; the muscular substance was very soft, so that the finger could be readily pushed through it. In this case disease of the heart was predicted, from the unusual throbbing and uneasy feeling about its seat, upon very slight exertion, and also from the very tremulous pulse, and sometimes almost pulseless condition of the wrist. I was assisted in this examination by Drs. Law and Davidson, of Columbia.

I will mention a circumstance connected with another case, which as it gave rise to much doubt as to the true nature of the patient's complaint, may possibly aid others in their diagnosis. A negro man, aged about 20 years, who had the usual symptoms of negro consumption applied to me for assistance, stating that he had tried others without benefit, and that he was poisoned—he was somewhat emaciated, with a quick and tremulous pulse, great debility, shortness of breath, and abdomen distended with a dropsical effusion; appetite tolerably good; but that which distressed him most was "something beating in his belly." Upon examination I found a pulsating tumour about the size of an orange, a little above and to the left of the umbilicus, but which could be very indistinctly felt at the time in consequence of the fluid in the abdomen. This tumour was thought by many to be aneurism of the aorta, and gave rise to much doubt in the minds

of all. I regarded his case however as hopeless, and put him upon a mild palliative course of treatment; but with this he soon become dissatisfied and in a few days applied to a Root Doctor, who agreed with him that he was poisoned, and treated him for *poison* several weeks, during all which time he become more and more emaciated. He at length applied to a Steam Doctor by whom he was very speedily despatched. I accidentally heard of his death, and Dr. A. H. Brown of this place and myself opened him in his grave two nights afterwards, and by moonlight dissected out the tumour, which we found upon examination to be a mass of tubercular matter in the mesentery, which pressed upon the aorta, with sufficient force to receive and transmit its pulsatory movements through the parietes of the abdomen. It is scarcely necessary to detail the appearances of another case. Certainly in all instances the tuberculous deposits are not so great as in the first case above mentioned, but it is a very fair representative of all. I will further mention that in all cases where the stomach was examined its internal structure appeared sound, but in all the instances, (six in number,) where I have examined the intestinal mucous membrane, it has presented extensive and deep ulcerations. In one case the ulcerations had perforated the serous coat in several places, but these perforations were prevented from opening into the cavity of the peritoneum by adhesions of false membrane and tubercular lumps, which projected into the cavity of the bowels. I was assisted in the examination of this case by Dr. Brown, of this place. In another case the duodenum, through its whole length, was dotted with small superficial ulcerations, the size of a ten cent piece or smaller; the coats of this bowel however were very much thickened and indurated, and in the remainder of the intestines were ulcers, but particularly numer-

ous in the last twelve or eighteen inches of the small intestines. Dr. Law was present at the examination of this case. The last case of this disease which I examined was during the last summer. I rode twelve miles to see it in order to satisfy the mind of the master, who was under the impression that his slave was poisoned. The case was a negro man, aged about 35 years; I was accompanied by three or four students of medicine who were anxious to see the cavity of the abdomen and its contents, which I had promised to shew them. I made the common crucial incision through the parietes of the abdomen, but could find no cavity. The opposite surfaces of the peritoneum adhered so firmly, and the spaces between the convolutions of the intestines were so filled with lymph, false membrane, tuberculous, and dark colored matter, that the whole presented a mass of disease impossible to describe, and which time did not permit us to investigate. It would have taken hours of tedious and careful dissection to have even separated the abdominal parietes from the intestines. I was more lucky in showing the viscera of the thorax, for here I found them less diseased than is common. The lungs contained some tubercles and small abcesses. Heart sound. There were no remarkable symptoms in this case that authorized the belief of such extensive disease in the abdomen, and what is a remarkable fact, he bore pressure upon the abdomen without complaint. He suffered from ascites in the course of his disease, but the water was purged off some weeks before he died.

Treatment.—I have nothing to offer as a remedy for this complaint, every article that I have tried having seemed but to aggravate the symptoms, at least doing no good. Bleeding and purging are highly injurious as they prostrate at once, and counter-irritants, as blisters, setons, issues, and tartar emetic

pustulations, have all been tried without any benefit. Tonics have had a better effect than all other remedies; but I have never known them to cure a case. Perhaps in the earliest stages of the disease, when unfortunately we are never consulted, some of the preparations of iron might be used with benefit.

October, 1840.

ART. II.—*Cases Illustrative of the Beneficial Effects of the Oil of Turpentine.* By Dr. JOHN BENNETT, late of Newport, Kentucky.

HEMORRHOIDS. In July, 1830, having charge of the health of the troops, at the United States Arsenal in Newport, a recruit who labored under piles of long standing and aggravated character, was attacked with colic. The abdomen was much distented. I ordered him ol. ricini ℥i. combined with ʒij. of oil of turpentine. On my visit the next day, I found him relieved from colic and decidedly better of the piles. The turpentine was continued for a few days, and the patient returned to duty free from the disease.

Since that time I have given the castor oil and turpentine, in that disease with uniform success.

WORMS. For several years I have laid aside the usual vermifuges, and given the turpentine exclusively in cases of worms, and it has rarely disappointed my expectations. In the convulsions of children, ascribed to worms, I have given the turpentine and oil with the happiest effects, when no worms passed off. If the convulsions of children arise from some other irritation of the mucous membrane of the stom-

ach or bowels, the turpentine and oil are, so far as my experience goes, the most efficient remedy. Their action is twofold—they soothe the irritated membrane, and at the same time carry off the irritating matter.

Since writing the above, I was called to see a child of Mr. H. It had been attacked with convulsions. Gave a portion of oil and turpentine. The medicine operated well, and it had no return of the fits.

Chronic Cholera Infantum. In July last, I was called to the country, some miles distant, to see several patients laboring under the fever. I was there informed, by a lady, that Cholera Infantum was rife in her neighborhood, and that it was universally cured by the turpentine and oil. In the acute stages of that disease, I have not tried it; but in the chronic form, it has succeeded better than any other remedy, to which I have resorted. I select out of my note book the following, from among a number of similar cases.

July 11th. Called to Mr. D.'s child, aged 18 months, with cholera infantum. Directed strong coffee without sugar or cream, to be given every fifteen or twenty minutes, with an occasional enema of salt and water, and a sinapism to the region of the stomach and bowels. *Visit at night.* Stomach less irritable. Frequent watery discharges from the bowels. If water is taken it is instantly thrown up. ℞. sub. mur. hydr., grs. iij.; sacch. alb. ʒss., mix and divide into twelve powders. One to be given hourly. 12th. Stomach still irritable, thirst great, pulse quick, extremities cold, discharges frequent and watery. Continue the calomel; cold applications to the head, which is hot; drink, slippery elm tea; diet, arrow root. 13th. Vomiting has ceased; discharges from the bowels frequent. Calomel and Dover's powder, in small, repeated portions. 15th. Purging continues. Gave chalk

and pulverized cinnamon. 16th. Discharges from the bowels variable in color and consistence. Directed the chalk mixture. *Evening;* some tumefaction of the abdomen; manifestation of pain. Give hyd. cum. creta and morphine. 17th. Belly tumid; discharges slimy and bloody. Directed oil and turpentine. 18th. Swelling of the abdomen subsided; discharges this morning more natural. From this time the convalesence was rapid and my little patient now enjoys excellent health.

Dysentery. About the 1st of July, this disease began to prevail in this place and its vicinity. A number of cases which came under my notice assumed a chronic form, in most of which, I gave the oil and turpentine with unequivocal success.

Case. A child of Mr. T.'s was attacked with cholera infantum, which terminated in dysentery, with a tympanitic state of the bowels, emaciation, &c. Gave the oil of turpentine, which afforded relief in a short time.

Case. A little son of Maj. T. of Newport, had an attack of dysentery, which was treated by Professor Harrison, of Cincinnati. After he had recovered from that disease, he was attacked with diarrhœa, when he became my patient. The usual remedies were put into requisition, without permanent relief, when I directed a portion of olive oil and oil of turpentine mixed. On my next visit, Mrs. T. informed me that the turpentine had acted like a charm, in removing the disease.

Case. A highly respectable lady in Covington was attacked with dysentery in July last. Her disease assumed a chronic character, and was removed by a few portions of the oil and turpentine. In short, I have found no remedy equal to the oil of turpentine, in chronic dysentery; and I am decidedly of opinion that its effects would be equally beneficial in the acute

form of the disease, or in any other diseased action of the mucous membranes.

In Gonorrhœa I have lately given the following preparation, which has removed the disease in less time and more effectually, than the bals. copaiva has ever done in my hands.

℞. Oil of turpentine ʒi.
Refined sugar ʒi.
Powdered gum Arabic ʒij.
Mint water ʒviij. Mix.

Of this, I give a table spoonful three times a day.

In Duodenitis attended with jaundice, I have uniformly succeeded with the turpentine.

Case. On the 30th October last, I was requested to prescribe for a young man, who labored under jaundice, with tenderness in the region of the duodenum. Tongue coated in the middle, and red round the edges. I directed him to take a blue pill every night for three nights, to be followed, the next morning, with a dose of oil and turpentine. The three portions removed the disease.

Case. I was this day, 14th of November, requested to visit a servant girl of Major T.'s of Newport. She was attacked on the 12th with pain in the epigastrium, and occasional vomiting. Her mistress, supposing she had colic, gave her a portion of calomel and afterwards a dose of castor oil, which procured several stools with little or no relief. She now had violent periodical pain in the epigastric region; great tenderness on pressure; tongue with white fur, red on the edges; pulse full, slow and soft; skin dry; whites of the eyes yellow. Directed calomel and Dover's powder, followed by castor oil and turpentine. 15th. Less pain; the medicine has acted on the bowels, but not freely. Direct a continuation of the medicine. 17th. Mending; free from pain. 20th. Well.

I could enumerate many other cases, proving the utility of turpentine. Perhaps there is no one medicine which can be applied with equal advantage in such a variety of diseases. I have usually combined it with oil, either castor or olive.

November, 1838.

ART. III.—*Cases of Gangrene of the Mouth.* Reported to the Fairfield Medical Association, Ohio, by JAMES WHITE, M. D. Communicated for publication by the Secretary.

This serious disease has attracted less attention than it deserves. It is in vain that the young physician seeks for a satisfactory account of it in our systematic works, and the cases published in our journals are not as numerous as they should be considering the frequency of its occurrence. If it be a secondary instead of a primary affection, it is not on that account the less interesting.

It is not my design to present to the Society an essay on this grave malady, but to read the notes of a few cases which may serve as *data* for its historian. All the cases which have occurred in my own practice, or to which I have been called in consultation, were preceded by constitutional disease, of a febrile kind, such as intermittent and remittent fever, measles, scarlatina, or some other affection. I have thought those fevers which have an epidemic character, more apt to generate it, than those which are purely sporadic. I have not seen it in a child under two years of age, or during lactation. It is peculiarly apt to attack children after protracted fevers and mucous inflammation. The following cases present all the varieties I have met with in practice.

Case 1. August, 1823. Called to see Miss G., aged *eight*

years—a fine healthy little girl previous to the present attack. Her mother informed me that she had been ill of fever five days, which was an intermittent of the quotidian type. On examining her mouth I discovered a foul, sloughing ulcer, on the lower lip, one fourth of which appeared scooped out by a process of sloughing, rather than ulceration. The surface of the ulcer was jagged, and covered with a dark, cream colored offensive slough; her gums were sound. The teeth were visible through the ulcer, when the mouth was closed; and there was a considerable discharge of saliva. The progress of this local affection was very alarming. Every time I visited the patient, which was twice a day, a sensible increase of it was visible, not only to myself but also to the family, who beheld it with emotions of grief and horror.

I cannot say how this little girl was treated before I saw her, or whether she had, indeed, any treatment at all. Her physician I suppose gave her no *calomel*, as, at that time, he was preaching against mercury and mercurial doctors.

A variety of topical means were used to arrest the sloughing: dilu'ed muriatic acid, privet tea and alum, camphorated alcohol, a fermenting poultice, and lastly, a carrot poultice, but all to no purpose. The destruction of parts went on, apparently without the least interruption. After having prepared the system well by the employment of mercurial cathartics, the force of the fever being subdued, and a perfect apyrexia established, I commenced the use of tonics—gave bark freely, and Fowler's arsenical solution. The last was given in double doses, for both the mother and sister undertook its administration without each other's knowledge. The consequence was, gastric distress and vomiting ensued, and the tonics were, for the time, discontinued, but she appeared benefitted by the mistake.

With the cessation of fever, the sloughing entirely ceased. The bowels were kept regular, and mild tonics, together with a light unirritating diet perfected the cure. The ulcer, mean while, was poulticed until pretty well filled with granulations; when the poultice was exchanged for a dressing of cerate and lint, and the edges approximated daily. The patient is still living, and, contrary to our anticipations, very little deformity remains.

This case disclosed two important facts:—1st. That the affection of the lip resulted from a peculiar febrile erythism of the system. 2d. That the sloughing did not prove critical or abate the violence of the fever, as is sometimes the case in severe attacks of *herpes labialis*, occurring in the progress of endemic intermittents.

Case 2. In the month of June, 1824, I was consulted in the case of Mrs. N.'s child, about three years old. It had been some weeks in ill health, having had slight fever and diarrhœa. The abdomen was very much swollen, and there was considerable emaciation. It was suspected to have worms, and had taken several doses of calomel within the last week. My opinion was asked concerning a soreness of its mouth, which had recently appeared. Upon inspection the mouth was seen to be perfectly sound, excepting that part of the gums which surrounds the last molaris tooth of the upper jaw, on the right side. Here the gum was converted into a grayish white, or cineritious slough, slightly receding from the body of the tooth, which was a little loose, showing its investing membrane to be in a diseased state.

Not having seen a case of the disease which commenced in this manner, I did not anticipate danger, and making a slight prescription sent the patient away. You may form some conception of my feelings when after the lapse of a few

days, upon being summoned to visit this unfortunate child, I found all the phenomena of the case changed, and an assemblage of symptoms presented, which but too clearly indicated death or permanent deformity. There was some fever present, the pulse had tolerable strength, the eye was clear, and the intellect not the least disturbed; but the cheek and eyelid of the affected side were very much swollen, and not red, but glossy, with a circular gangrenous patch near the centre of the former, an inch in diameter, of a tawny hue, soft, and slightly depressed. Other parts of the cheek were firmer, showing a low grade of inflammation, with infiltration into the celluar tissue. The breath was highly offensive, and on examining the mouth a dark slough covered the inside of the cheek opposite the gangrenous part without; the gums were black, and the mortification extended high up towards the orbit of the eye. Caries had seized upon the jaw—the teeth were loose—and some of them were plucked out by the patient.

The farther history of this case need not be told. Suffice it to say, that it travelled through all its stages, with the uniformity which distinguishes its career, when not opportunely arrested by the employment of appropriate means. The little patient was perfectly sensible throughout the whole course, and took nourishment as long as she was capable of swallowing.

Case 3. In the fall of 1828, Mr. J. S., aged about twenty years, a farmer, in which business he was engaged up to the time of his illness, was attacked with fever and *anasarca*, from which he speedily recovered by the employment of mild antiphlogistic remedies—and continued in good health till January 7th, 1830, at which time the measles became epidemic. He was taken with chilliness and fever; pain in

the head, back and limbs; his tongue was coated and its edges red; but there was no catarrh, or any other symptom of the epidemic. He was treated with venesection and purgative doses of calomel and jalap, and calomel followed by castor oil; and when the fever declined, a blister was applied to the nape of the neck, to relieve him of the pain in his head. There was, however, in this case a good deal of drowsiness and hebetude, with some dilatation of the pupils which, together with pain, led me to apprehend mischief within the head. Visiting him on the eighth day of the fever, I found him in the same state of stupor and listlessness, but the pulse was softer, and there was less fever. I discovered some fœtor of the breath, but the gums did not appear to be affected. I believed that a mercurial effect was about being developed. A dose of oil was prescribed, and the blister repeated.

Visiting this patient some days afterwards, I was surprised to find him sitting up before the fire apparently well, but his face tied up with a handkerchief. Enquiring whether his mouth was sore, his mother replied, that "he was troubled with tooth-ache, and that his breath smelt very bad." On examination I found the left cheek very much swollen, pale and glossy, the eyelid of the same side œdematous and nearly closed, and his breath very fœtid. On examining his mouth, a black slough occupied the inside of the cheek and the gums of the three first molares. The sphacelation extended high up towards the orbit of the eye, and the teeth were loose, showing caries of the bone.

The fatal gangrene had established itself, and yet he appeared otherwise free from disease. His pulse was of good strength, fever slight, could take nourishment, and the whole train of febrile phenomena had disappeared.

The general and local remediate measures confided in, were

too weak, and consequently altogether inefficient: they did not even abate, much less arrest the progress of the case which went on to a fatal termination.

Case 4. In February, 1834, I was called to see Homer, son of Mr. Salmon Shaw, aged eight years, who was taken with the measles, then prevailing epidemically. He had fever, a plentiful rubeolous efflorescence, dry skin, slight chilliness, headache, and pain in the chest, which were very much aggravated by an incessant dry cough; his tongue was coated, and red at the tip and edges;—and his epigastrium very tender, with considerable tension. His father insisted, that no calomel, or other mercurial medicine should be given if I believed it *possible* to cure him without its use. His objections to mercurials probably originated from what he had seen of their abuse; heightened by the recent death of a child three or four years old, in his vicinity, from gangrene of the mouth, under all the horrible circumstances incident to such cases. We readily agreed to give no mercurial, believing it contra-indicated, and for the same reason excluded tartrate of antimony. Blood letting repeated, mild laxatives, a blister to the chest, and diaphoretics were found to be adequate to the cure, which appeared to be pretty well established, when symptoms of gangrene made their appearance.

Happily, not a single grain of calomel had been used in the treatment of this patient; and it affords another evidence that *gangrene* of the mouth is, sometimes at least, not the product of that mineral.

The manifestation of the approach of the gangrene, was the appearance of a superficial slough in the gums covering two of the molar teeth, on the right side of the upper jaw. The gums in other respects appeared sound, and there was no fœtor of the breath, or flow of saliva. I confess that I did

not at that time suspect the danger that was impending; but in the course of a few days the symptoms were sufficiently developed to admit of no doubt on that subject. The slough had increased, the periostium of the teeth and alveolar processes had become implicated, the breath was slightly fœtid, and there was some irritative fever. A mild laxative was given, and a light nutritive diet enjoined. A prescription was made to be applied every six hours to arrest the progress of the sloughing. I requested Mr. S. to make a daily record of the progress of the case, and of the effects of the remedies, which is here subjoined:

"*March* 1*st*. Gums eaten out between two teeth—applied prescription. 2d. One tooth loose, eating continued, prescription as above. 3d. Canker spreading very fast, and communicated to the cheek. 4th. A tooth extracted—applied muriatic acid and honey, equal parts, every four hours—canker spreading rapidly. 5th. Muriatic acid and honey continued, swelling of the cheek increased. 6th. The same application continued—the flesh separated from the jaw bone, about half an inch up, and three-fourths of an inch long. Applied charcoal, and continued the acid and honey. 7th. The same application continued—another tooth extracted." 8th. The gangrene now appeared to have made such progress, as to leave no hope in the case. He was in that condition, from which I had never seen a single recovery. The right cheek was very tense, swollen, pallid and glossy; the intumescence extended to the right eye, which was closed, and to the lips, drawing the right commissure to one side, from which the saliva flowed copiously. The whole expression was frightfully distorted, and the breath had its characteristic fœtid odor. Caries had indeed seized upon the jaw, from which the teeth were extracted, and the cheek appeared, in-

ternally, hollowed or scooped out, about the size of a fifty cent piece, and was covered with a thick black slough. The mortification appeared to extend from the jaw and cheek, high up towards the orbit of the eye; and judging from the celerity with which the gangrene had progressed, during the last twenty-four hours, it was thought that by the next day it would, in all probability, perforate the cheek. The patient had fever, but the skin was soft and slightly moist, pulse of good strength, intellect clear, and apparently without pain. His appetite was good and he took chicken soup, gruel, panada &c.; his bowels were kept regular by mild laxatives, and enemata. Tonics were not deemed necessary, and no blister was applied to the cheek, from a conviction that it would do no good; indeed, in every case in which I had employed it, a blister had done manifest harm, by subjecting the patient to unnecessary pain, and adding to the general irritation.

Under these discouraging circumstances I examined anew Dr. Jackson's excellent essay on *Gangrenopsis*, published in the Medical Recorder, 1826, vol. XII. Among other valuable precepts, indicated for the management of these bad cases, he makes mention of the Baron Van Swieten's remedy, *undiluted* muriatic acid. His words are, "But Van Swieten used undiluted muriatic acid with great success." He says—"It presently stopped the gangrene, and soon after the eschar has separated from the parts in which there was life—nor have I ever known this application to fail me, except where the gums being entirely putrid, the jaw bone was affected; for then I could not prevent its being carious; but if the soft parts only in the inside of the mouth are the parts that are gangrened, it will certainly cure them." The Baron speaks of his remedy in the strongest terms of commendation, when applied in gangrene affecting the "soft parts only in the in-

side of the mouth." He seems distrustful of it however, when the bone is carious. I resolved, notwithstanding, to use the strongest muriatic acid; and shall proceed with Mr. Shaw's daily report, which continues thus:

"8th, four o'clock, P. M., applied undiluted muriatic acid; six o'clock same; seven o'clock same; and continued to apply it every hour till 3 o'clock A. M., next morning; mortification arrested, and reaction established; sensibility in the parts acute. 10th. Same application twice a day; the sensibility of the parts acute. 11th to 19th. Applied tinct. myrrh and alum, appearances very favorable."

Here then, we find undiluted muriatic acid, not only capable of arresting mortification of the soft parts within the mouth, but also, that it is equally adequate to the subdual of caries, since we find that on the 9th day, the sphacelation was arrested, both in the bone and soft parts.

A swab was made by rolling and securing with thread, a piece of rag on the end of a stick, which, when charged with the acid, was carried up repeatedly, and brought in contact with every point of the diseased surface. These repeated and fresh applications of acid, appeared to give no uneasiness at first, excepting paroxysms of cough from the passage of muriatic acid gas into the glottis, in inspiration. The acid was, as it were, *kneaded* into the parts. It presently dissolved or decomposed the sloughs, and came into contact with the living parts, which re-acted healthfully under its enlivening stimulation. It was at this crisis only that the patient began to experience pain, which continued to be more and more acute, under each successive application, until he could no longer bear it; which was the case on the eleventh day, when it was discontinued, and tinct. myrrh with solution of alum, substituted.

When the sphacelation ceased the wound soon put on a healthy appearance, granulated and secreted healthy pus. The swelling receded from the cheek, and eyelids; and a proportionate amendment occurred in the system at large; the digestion and health improved, and in a short time the patient was able to sit up. The ulcer, however, did not heal until a portion of the dead bone was extracted from the jaw, about the nineteenth or twentieth day; it then soon filled up, and cicatrised. The deformity is but slight.

Case 5. James, son of Mr. C., aged 5 years, was seized with intermittent fever of a quotidian type, in September, 1836. There was nothing in the symptoms to distinguish it from an ordinary endemic intermittent, except that he suffered very much from severe headache, which postponed the time for giving tonics. The treatment consisted of blood letting, three doses of calomel, always speedily worked off by castor oil, and infusion of spigelia by which a few lumbricoides were discharged. A few days after having discontinued our visits, his mother brought him to us, believing he was salivated. Upon examining his mouth, I found the gums sound, with the exception of that around the second molar tooth of the right side of the superior maxillary bone, which was converted into a yellowish white slough, receding from the body and neck of the tooth. The cheek was also affected, lying swollen but not glossy. The mucous surface of the cheek being against the diseased tooth, was somewhat scooped out and sloughy, with elevated, red margins. The tooth was still firm, but caries had nearly destroyed its external lateral surface. It was believed to be a case of incipient canker, or gangrena oris.

The chill and fever still continuing though in a subdued degree, tonics were prescribed, which arrested the paroxysms.

A solution of sulphas cupri and pulv. cinchon., as recommended by Dr. Coates, was applied three times a day, till the sloughy appearance of the part was removed, and the caries of the tooth was arrested, when mild unirritating washes were used to complete the cure.

This case was taken in time. The disease had not extended to the periostium, and the tooth remained firm. It differed however from other cases, in which the teeth were not affected, excepting in their invest membrane. They became loose, and were extracted or fell out.

As already intimated I have never seen a case of gangrœna oris, in any form, without its having been preceded by some serious constitutional derangement. Thus, at one time we find it engrafted upon bilious remittent or intermittent fever; at another, on fever with visceral inflammation; at another on measles, or scarlatina. I lost two children of this disease in 1823. The local affection occurred in each, in the first week of the fever, which was a bilious remittent. It may, however, occur in the wane of the disease, or when the system is verging towards collapse, or as a sequela.

The treatment of these cases must have regard, first, to the pathological state of the system at large; and, secondly, to the local affection. The latter is the result of constitutional derangement of a febrile kind: it was especially so in the first reported case. The sloughing could not be arrested until the fever was conquered. Therefore, the removal of the fever, or correcting the general constitutional derangement, is of the first importance; and indeed, an essential preliminary step towards arresting the local disease, in its first stage. The local disease on its appearance cannot modify our prescriptions, or afford contra-indications in regard to the employment of general remedies. Besides the general means

instanced above, local measures are of equal, and in some cases of paramount importance. The best we have used to stop the sloughing in its incipient stage, is a saturated solution of *sulphas cupri*, with which the part is to be touched three or four times in the twenty-four hours, until the sloughing is arrested.

If these means do not effect that object, and especially if the mortification have made much progress, having extended to the cheek, which is occupied by a deep, dark slough; and to the bone, which becomes carious, no remedy has, I believe, stronger claims, to our confidende, than *undiluted muriatic acid.* It is vain to expect an arrestation of gangrene, by the employment of general remedies at such a crisis, however valuable they may be as adjuvants. Nothing short of the application of a strong local stimulant, such as is capable of making a vigorous change in the organic actions of the part, producing a lively reaction, and at once elevating the parts to a grade of excitement incompatible with the sloughing process, can avail in such a case.

October, 1838.

ART. IV.—*A Case resembling Fungus Hæmatodes successfully treated.* Reported to the Medical Society of Tennessee. By SAMUEL HENDERSON, M. D.

THE following case of Fungus Hæmatodes occurred in the subject of a lady, Mrs. L., ninety-two or three years of age, of full habit, and tolerable health.

Oct. 14th, 1838. I was called to see the patient, who about one year previously discovered a projection from the centre

of the forehead, covered with a hard horny scab, which, when removed, left a small fleshy tumor, of a soft, spongy, elastic feel, moveable not discolored, and but slightly painful. Gradually enlarging in size, the old lady become very uneasy. At the time I saw her the tumor had grown to the size of a dollar in diameter, and projecting irregularly half an inch above the surrounding integuments with small openings or fissures over its exterior portion, having the appearance of rough contused, or lacerated edges, of a dark red color yielding to pressure, but soon resuming its former state, and discharging a thin, bloody or ichorous humor, extremely offensive. It had occasionally stinging or darting pains as she described them. Upon examination, we advised extirpation of the tumor, to which she strongly objected. We then applied mild dressings, and pressure by means of a bandage. Afterwards we used escharotics and caustics, which retarded its growth for a time; but when they were omitted, it spouted out like a mushroom. From the extreme uneasiness of the patient, and her great aversion to extirpation, I determined on trying to destroy the substance by some arsenical preparation, with which view its surface was slightly and frequently touched with Fowler's solution. In a few days, the part turned dark, became gangrenous, and sloughed down to the periostium; and by means of mild dressings, and adhesive plasters, the ulcer healed kindly, leaving no trace of disease, except a small ulcer on the nose of the same nature, and two or three small prominences on the face having the appearance of the former.

Will the writer favor the profession with the result of this case? Did the new tumors grow to any thing serious?—*Eds.*

REVIEWS.

ART. V.—*American Journal of the Medical Sciences. No. LI. Article XII, a Review of Gross's "Elements of Pathological Anatomy,"* under the signature of T. S.

WE are told by the Dean of St. Patrick's, that

> *"No goose was e'er so gray but, soon or late*
> *"She found some honest gander, for her mate."*

And at the time when the sentiment was thus expressed, it was probably true. "*At tempora mutantur, et nos mutamur cum illis.*" Times and their concomitants have undergone such changes, that the truth of the distich, if not quite extinguished, has grown rusty and questionable. Of this, were the honest Dean living at present, we think we might so far convince him, as to induce him to alter or disavow the couplet, or expunge it from his works. And the argument employed should be ocular demonstration.

We have now before us, in the form of an issue from a Philadelphia press, *a thing* (whether "*gray*" or *grisley*, let others decide) of *deliberately meditated calumny and mischief*, not only heretofore *umated* in its kind, but, as we hope and believe, destined to prove *unmatable* hereafter. We allude to the *pasquinade* on Gross's "Elements" (miscalled a "review" of them) referred to in the heading of this article.

Considered in the aggregate, that paper is one of the most repulsive and reprehensible productions of the sort we have ever examined. Some book-knowledge, shrewdness, and independence of mind excepted (yet, instead of "independence," we should have said *effrontery*) it presents a mass of offensive and condemnable matter, destitute of a single redeeming quality. Or, if there belong to it another element approaching an exception to this, it is its style of composition. And though that possesses nothing even bordering on excellence, but is throughout a thing of the meagerest mediocrity, it is so far free from gross and striking faults, as to be entitled to pass without censure, protected from the critic's scourge by its insignificance.

The spirit of ill-natured cavil, censoriousness, and acrimonious but edgeless sarcasm, which breathes through the article, from beginning to end, is, in the utmost degree, *condemnable*, not to apply to it a harsher term; and, to all liberal and well-disposed readers, that spirit must necessarily render it extremely disgusting. To discourteous and embittered calumniators only can it be acceptable.

True; the paper neither pours forth a constant stream, nor breaks out in fitful explosions, of consuming ire, as if it would reduce to ashes, and scatter to the wind whatever may oppose it, or dissent in any way from its oracular dogmas. But, in its essence, it is intensely rancorous and malignant, and would, were its energy equal to its fellness, wither like the sirocco.

If the article be not instinct with a spirit thus deeply malevolent and destructive, then are its internal qualities at utter variance with its external aspect. For such is the import of its ill-boding physiognomy. But we must speak of it in simpler and less figurative terms.

Previously however to our commencement of the exposition here contemplated, we shall give a succint representation of the light in which the task that lies before us is to be viewed; that it may be the more fully and clearly understood, and the more readily and justy appreciated by our readers.

It is our wish, then, to have it known, and borne steadily in mind, that the animadversions about to be made on the production we are to examine, will have nothing in them of a private, or personal, or party description—nothing, we mean, of either vindication or censure *exclusively individual.* To whatever extent such *seeming* sorts of matter may be occasionally introduced, they will be *only* seeming, and not *real.* In proof of this, they will be ultimately made subservient to the support and promotion of a *general* purpose. And that purpose is,

THE DEFENCE OF WESTERN MEDICINE AGAINST THE ASSAULTS AND ASPERSIONS OF A FEW EASTERN PENS.

We say "a few" of those "pens;" for, to the honor of our eastern brethren *generally*, and in strict justice to them, we acknowledge that they are *but few.* We even believe them to be nothing more than the wanton instruments, not of any thing sufficiently respectable *in number or standing* to be called *a party;* but of a puny, carping, and self-sufficient *clique*, not in any degree supported by the sympathy, countenance, or co-operation of the high-minded and well-disposed members of the profession in the Atlantic States.

But petty as we believe this evil-eyed bevy to be, it is sufficiently considerable to do mischief, by injustice and traducement, unless it be opportunely chastized, and effectually checked. An issue from it thus injurious becomes the more certain, when, as in the present instance, the assailing body, though feeble in itself, adds to its means of annoyance and

aggression, by operating through a Journal of standing and influence, which has sullied its character, by becoming thus the instrument of an ill-intentioned faction. In such a case the authority of the Periodical passes to the credit of the factious collaborators, and in that way magnifies, sanctions and confirms the evil—But, without further preface, we must hasten to our work.

The criticism, by T. S., as there is a strong reason to believe, was the result of a concerted scheme, in the nature of a *conspiracy*. No doubt can be even plausibly entertained, that it was concocted and composed, with a premeditated design to destroy, if possible, the credit and character of Professor Gross's Elements—to degrade them from their present justly elevated standing in public estimation, and thus prevent the work from circulating extensively, and becoming a text-book in Pathological Anatomy—among other reasons, because it is a product of the West, and not of the East. For, in their caviling comments on the writings of *western* physicians, the bevy of *modern Zoiluses*, to which we have referred, seem abundantly imbued with the captious and and persecuting spirit of the *Hebrew inquisitors of old*, when they tauntingly demanded, "Can any thing good come out of Nazereth?" Nor are they backward in applying this arrogant interrogatory sneer, to their own commendation. Had not some feeling to this effect occupied, at the time, the mind of the reviewer, it is hardly possible, that he would have toiled so arduously, and so discreditably equivocated, as he has done, to find in the work, which he professed to be examining, a *few inconsiderable faults*, when he could, with twenty times the ease, have pointed out striking excellencies, *in fifty-fold* the number. For it is a fact as singular as it is suspicious, that, while all other journalists, (and they are *numer-*

ous) who have noticed Gross's Elements, have, without an exception, which we now remember, bestowed on the work the highest commendations, for its numerous and varied excellencies, T. S. has commended it, in scarcely a single instance; and, when he has done so, it has been in a style of the most cold and meager approval—his thoughts and words apparently dragged out of him by a fifty horse-power! Of cordial praise he has given it none.

Nor has the work received honors from *journalists alone*. Far from it. It has been adopted as the *text-book* on Pathological Anatomy, by several of the medical schools of our country. *And Dr. Gerhard has himself* (as we are positively assured) *recommended it to his pupils, in the Blockley Hospital!*—which he certainly would not have done, had his opinion of it been as unfavorable as that of T. S. And, as a farther proof to the same effect, soon after its publication Professor Gross was elected a member of the Philadelphia Pathological Society, of which Dr. Gerhard is President!!

Such are the facts of the case. And for the production of the sweeping and indiscriminate condemnation by the reviewer, a *strong reason* is alleged to have been in action. We refer to such a reason, however, only as matter of apparently well-grounded suspicion and report, without professing to have any intelligence, amounting to positive proof of its existence. But supposing it to have existed, which we have never doubted, whether it was just, magnanimous, or in any way undeserving of deep reprobation, let an enlightened and liberal community judge. And if we mistake not their sentiments in a case of the kind, they will judge severely, and decide promptly. The reason alleged is as follows.

A physician of Philadelphia, of high qualifications, is said to be engaged in the preparation of a work on Pathological

Anatomy, designed also for a *text-book*—at least as a source of elementary instruction for students of medicine, And the super-sensitive reviewer was scandalized even by the *fancy*, and quite indignant at the *fact*, that a Western physician should have the effrontery to publish on the same subject before a Philadelphian!—and thus, perchance, bear away, "at one fell swoop," the palm and the profits!

Hence the probable ground, on which T. S. presumes to rebuke Professor Gross, in a tone and manner, neither decent nor admissible, not to apply to them terms more scornful and reprehensive, for not having devoted *more than four years* to what he calls, with the intent to disparage it, the "COMPILATION" of his work; while he knows, or at least *ought* to know (the fact being true and susceptible of proof) that the production is *not* a compilation; containing as it does, a large amount of matter, *not derived from other writers;* but which the Professor drew from his own resources. And, as respects the time spent by Professor Gross in the preparation of the work, "*four years,*" as every body knows, are a protracted period, for an author to devote to the preparation of a couple of volumes, in the United States; especially in these "*heels-over-head*" times, when the brain, the pen, and the press move alike with locomotive speed. On few if any professional work, of the same size, has more time, we think, been bestowed by an American writer. In the present case, moreover, had not the publication of the two volumes, of whose precipitate passage into existence T. S. complains in a style so pert and unbecoming, ante-dated the birth of the Philadelphia production already referred to, and thus threatened to "keep it from the light" and bar against it the doors and avenues of sale and circulation, by itself taking possession of them —had not the appearance of the "Elements" done this, we

venture to believe, that their "four years" of gestation would not have been either professionally denounced, or even spoken of unkindly. And we further believe, that, had the volumes in question been a work of *inferior merit*, and therefore not dangerous to the projected Philadelphia publication, they would have experienced from the American Journal much less of censure and intolerance, than has been so liberally awarded them. In minds of a certain caste and caliber, the rancour of the hatred is in direct proportion to the craven-ness of the fear, experienced by them toward a powerful and dangerous adversary. It is the brave and magnanimous alone that cherish and express a becoming regard for a distinguished antagonist. The very condemnation therefore so lavishly be-stowed on the "Elements of Pathological Anatomy," may be correctly enough received, as a virtual acknowledgment of their peculiar merit. We shall only add, that so gross is the discourtesy of the criticism on those volumes, as to amount, in some instances, to unqualified rudeness, not to strengthen the expression, and call it vulgar insult. If the reviewer is not conscious of the truth of this remark, he is destitute alike of sound judgement, and refined feeling; and if he is thus conscious, and has notwithstanding been guilty of the out-rage, he is an unprincipled slanderer. He may take his choice. On one or the other horn of the dilemma he is destined to be empaled.

Admitting the truth of all we have alleged, (and we hold ourselves thoroughly prepared to prove it) what should be said of the "American Journal of the Medical Sciences," which assumes to be the Delphic oracle of medicine for the *United States*, and has invoked aid from western pens in furtherance of its purposes to that effect—what should be said of that Journal, for the promulgation through its pages, under such

circumstances, of an article so reprehensible in its spirit and character, and, in its bearing, so unjust and unfriendly to western medicine? To this question an enlightened and magnanimous public will find no difficulty in rendering the merited reply. And that that reply, when given, will be condemnatory of the act, cannot be doubted.

Admit the well known claim of the American Journal, and it is the head of the whole American family of medical Journals, and the *foster parent* of all the other medical productions of the country. What then should be its spirit and deportment toward such productions?—kind, parental, dignified, and encouraging—not marked and degraded by the spiteful taunts, and embittered censure of an exasperated *step-dame.*

In saying that the American Journal has "invoked aid from western pens," it is our wish to be clearly and distinctly understood. And our allusion is particularly to the following occurrence.

In the course of last summer, a distinguished Philadelphia physician, warm in his friendship toward the American Journal, and interested in its standing, passed a few days of sojourn in the city of Louisville. And while here, he made to some of the physicians of the place, a direct proposal to the effect we have stated. He expressed a wish that no medical Journal might be henceforward published west of the mountains; but that western physicians should write only for the "American Journal," in order that the concentrated result of the observation, reflection, experience and every other form of research and information, of the whole American Faculty of medicine,—a Faculty whose resources are furnished by a region more extensive than Europe, and embrace all that concerns the health of sixteen or eighteen millions of people—

in order, we say, that this mighty mass of professional intelligence might be proclaimed to the world, by a SINGLE ORACLE—and that oracle be the AMERICAN JOURNAL!!. On such a proposal comment would be lost. The silence of astonishment most fitly corresponds to its *boundless presumptuousness!!*

Notwithstanding this overture, which, though not so intended, was virtually an indignity to the manly ambition and independence of the West, yet in the very first number of that Journal subsequently issued, is contained the article so unjustly and arrogantly censorious and condemnatory of a western publication; though that publication is decidedly one of the most valuable and creditable works in medicine, that has ever been written in the United States! Such is the consistency of some of the friends and immediate patrons and collaborators of the American Journal! and such the bearing of that Periodical toward western medicine! And though we do not pronounce it the *official organ* of any of the Philadelphia medical schools; yet if we did so pronounce it, our apprehension of being convicted of error would be but slight. And a majority of the Faculty of the country would back us in opinion.

Before taking leave of the American Journal, we shall advert to a clause or two contained in its "Advertisement for a New Series," published in the August number of it, and also issued in a Circular. From that paper we make the following extracts.

"The great object proposed in the institution of this Journal" (the American) "was to establish a NATIONAL WORK devoted exclusively to the improvement of medical science, and to the elevation of the character and dignity of the profession, to the entire rejection of all local and individual interests and party views."

* * * * * "THE OBJECT AIMED AT HAS BEEN ATTAINED, AND THIS JOURNAL IS REGARDED BY THE GREAT MASS OF THE AMERICAN

MEDICAL PROFESSION AS THEIR REPRESENTATIVE, AND AS SUCH IS RECEIVED AND QUOTED ABROAD." Again;

"In this department" (that of reviews) "entire freedom of criticism is allowed, always, however, marked by *candour*, and in that *courteous tone*, which alone comports with the *true dignity* of science."

These extracts speak *for* themselves and *of* themselves, with a degree of plainness which renders it hardly possible to misunderstand either their meaning or their object. Our comments on them shall therefore be brief, and clothed in language of the same plainness with that which characterizes our text.

Of the proud aim of the American Journal at a NATIONAL standing, we do not complain. On the contrary we deem it both creditable and useful. Without loftiness of aim, loftiness of attainment, or of action, is never achieved. But of the dogmatical and self-sufficient proclamation of the Periodical, that it has actually "attained the GREAT OBJECT of its institution," (a "national" rank) we cannot speak in terms so commendatory.

Admitting the proclamation to be true, it would, we venture to think, have been much more in accordance with delicacy and decorum, to have placed the announcing trumpet in other hands, and allowed it to be filled by other lips, than those of either the Editor, or the Proprietors of the Journal. Nor might it have been amiss in those gentlemen, when they were preparing for their blast, to have called to mind the time-worn adage, whose truth has stood the test of ages, that "*self-praise is no commendation.*" But the worst is to come.

We again, in a tone of entire confidence, venture not only to "think," but openly to assert, that the proclamation is *not true*. The "great mass of the American medical profession" *do not* regard the American Journal as their "REPRESENTA-

TIVE." Much more exclusively (or we are misled by what we have seen and heard) does the medical profession of our country regard that Periodical as the *representative of one of the Philadelphia schools of medicine.*

Be these matters however as they may, we feel secure from contradiction in saying, that through the whole of the first extract there breathes a spirit of *self-glorification* and *complacency*, which does not well comport with sentiments of becoming modesty, and enlightened self-respect. And we have sought in vain for evidence of the Journal's redemption of its pledge to "reject all *local* and *individual* interests and party views." On the contrary, the import of the evidence presented, appears to us directly the reverse.

As regards the last extract, it neither calls for, nor deserves from us any reply or notice, other than that which it has already received. In what degree the American Journal has, in its "review department," redeemed its pledge to observe "*candour*" and "*courtesy* of tone," or "true dignity" of manner, toward the works and their authors subjected to its ordeal, our readers may learn from the strictures we have already made, and some which we shall make hereafter, on the review of Gross's "Elements," by T. S. To that source of information therefore they are respectfully referred.

A thought or two more on the NATIONALITY, and the REPRESENTATIVE character of the American Journal, and we shall be done with it under that head.

The collaborators are of course the REPRESENTATIVES (we might say the VERY LIFE-BLOOD) of the Journal; and (the Editor making one of them) they number *forty-three;* not more, we apprehend, than *one* in every *three* of whom writes for the work a single line *per annum.* The number of actual collaborators, then, does not *exceed fifteen*—we doubt much whether it

reaches it—and the *regular* contributors even of these (if there be any) are by no means the ablest writers on the list. Such we believe is a correct statement of the case.

Let then the names of these *fifteen real* collaborators be selected, and presented to the whole "American medical profession," accompanied by the question, "Do you choose these men as your PROFESSIONAL REPRESENTATIVES, in all civilized countries, and so acknowledge them to your contemporaries and to posterity?"—let this we say be done, and what will be the issue? The answer is plain. It will be an emotion of surprise, if not of scorn and scoffing, and a negative reply from Maine to Louisiana, and from the eastern to the western extremes of the United States. And not a few of the collaborators themselves will cordially unite in it. We verily believe that the whole of them will thus unite. There is not an individual among them, who would not consider such a proposition preposterous—or something worse.

We wish it to be understood, that, in making these remarks, we mean no disrespect toward the collaborators of the American Journal, *as individuals*. Our animadversions relate only to the fallacy and folly of pronouncing the writings of *any* fifteen, twenty, or even *fifty* physicians, residing in a *small section* of the United States, to be a fair epitome or representation of the professional views of the whole body of the American Faculty.

As regards the assertion, by the Editor and Proprietors, that the American Journal is "received and quoted *abroad*, as the REPRESENTATIVE of American medicine," whether it be true or false, is a matter of indifference to us. Such reception and quotation, supposing them to exist, have no bearing on the facts of the case. They only unite with other circumstances to show, that the people *abroad*, even the most fully

informed of them, are too ignorant of the great medical concerns of the United States, to be competent judges in a question of the kind, which involves such a variety of unsettled elements.

To consummate the untruth and absurdity of pronouncing the American Journal the REPRESENTATIVE of American medicine, a remark or two more will be fully sufficient.

But *one* of the collaborators of that work (Professor Mussey of Cincinnati) resides in the Mississippi Valley, which contains perhaps *six millions of inhabitants.* And his residence in the West has been brief, and his sphere of medical practice and observation too limited to be a source of much information, either to himself or to others. Without intending the slightest disrespect toward the Professor, therefore, we assert that he is utterly unfit to represent the condition of western medicine. He would not himself aspire to an enterprise so arduous. Nor do we know that he has written a line for the American Journal, since his migration to the West. We are rather inclined to believe that he has not. But his having done so would have no effect on the nationality of the work.

And it would be easy to show that the case of Professor Smith of Baltimore, who is also a *nominal* collaborator of the American Journal, is still weaker. True; he has lectured on medicine in Lexington, one of the healthiest towns in the Union, during *two winters.* But he has had no opportunity to see even a single case of the summer and autumnal diseases of the West. To represent him therefore as a qualified representative of western medicine, would be as strongly marked by folly as by presumptuousness! Nor would he, we feel condfident, countenance the act.

We shall only add, that the entire list of the American

Journal's collaborators does not contain the name of a single individual, who, *from his own resources*, is prepared to write a *respectable essay* on the diseases of the Mississippi Valley. Were any one of the collaborators to attempt such a production, he could not possibly succeed in it, without deriving the matter of it from western physicians.

If the foregoing representations be incorrect, let their incorrectness be established, and we shall instantly retract them, on account of their fallacy. And if they be true, we leave it to the decision of an enlightened public, whether the American Journal is not bound, for a similar reason, to retract its claim to the high standing of a NATIONAL REPRESENTATIVE of American medicine, either at *home or abroad?*

That we may not be suspected of exaggerating the odiousness of the spirit of the article before us, we shall extract from it a few of its offensive passages. Nor shall we trouble ourselves by searching for the *most* offensive, as it would not be easy to make the selection—so nearly do many of them come to an equality in demerit.

That the entire force of our statements and comments may be the better understood, and the more correctly appreciated, we shall first lay before our readers the observations of Professor Gross, and follow them immediately by the exceptionable strictures and carpings of the reviewer.

Before commencing this process, however, we ask the favour of our readers to bear in mind what we have already said—that, as far as our knowledge on the subject extends, every Journal, the American excepted, that has noticed Professor Gross's "Elements," has done so most favourably—several of them in terms of superlative commendation. This contrast renders the entire case of the review in the American Journal the more singular and unaccountable, and might justify us in exclaiming with the poet,

"There's something rotten in in the State of Denmark,
"Which needs much reparation!"

A mere difference between men in intellect, attainment, and taste, could never produce a difference so wide and radical in unimpassioned judgment. As soon shall the difference of a few degress in latitude and longitude, produce antipodism in situation. But one cause can account for such a glaring contrariety of sentiment between writers and judges nearly equal in mind, and enjoying nearly similar opportunities to be informed. And that cause is, *justice, impartiality, and kindness on one side; and injustice, hostility, and prejudice on the other.*

Before commencing the extracts, and our comments on them, we shall observe, once for all, that it is not so much the *substance* of the reviewer's remarks and cavils that we deem so reprehensible. It is the odious spirit with which he has made them. And that can be fully perceived and appreciated, in its deformity and offensiveness, only by a perusal of his entire paper. We quite despair therefore of portraying it to the life. We shall only add in this place, that the reason why the objections and censures of T. S. are not *substantially* condemnatory and severe, is sufficiently obvious. It was no want of *desire* in the gentleman to that effect. It was in part perhaps from a want of *power* in him; but chiefly, because he could not find in the work he was endeavouring to injure, matter sufficiently exceptionable to render them so. In returning from this digression, to the more immediate object of our article, we ask the particular attention of our readers to the proposed extracts from the Professor and his reviewer, which shall be laid before them, and are as follows:

Professor Gross. "Bearing in mind the above definition, it may be assumed as a general proposition, liable to few exceptions, that all organic diseases, whatever be their seat or extent, are the result of inflammatory action, either of an acute or a chronic kind. To many this proposition may be startling; nevertheless, if it be carefully examined, it will be found, I doubt not to be grounded on fact."

Reviewer's remarks. "Why our author should think the above proposition might prove *startling* to many, does not seem very clear. It is certainly not so from its novelty, since even *the merest tyro* in medicine is familiar with it as one of the principal dogmas of Broussais. It is we confess however rather *startling* to hear so exclusive a view reiterated at the present time, as a *positive truth*, when its insufficiency is maintained by most pathologists of the present day."

Here the reviewer, *by way of taunt and affected contempt*, twice *repeats* the words of Professor Gross—an act which is never practised by *gentlemen* toward each other, in such a spirit and temper, except as a measure of actual insult, or, which amounts to the same thing, as a manifestation of scorn or disrespect. We have called the reviewer's contempt exhibited toward Professor Gross "affected," because, toward the author of a work like that which he was struggling to discredit and destroy, he could not *feel* contempt, in the true acceptation of the term. Nothing can awaken that feeling in a man's mind, except what he really considers *beneath* him. And, from the unlucky moment, in which T. S. began to empty his *vial of malice and smothered wrath*, on the fair pages of Professor Gross's "Elements," until the last dripping of its noisome dregs, he felt a mortifying consciousness that their author was perched immeasurably *above* him. In evidence of this, had the Professor been on the spot, the reviewer would not have used, in his presence, the words and manner, which he did in his absence. Yet the manly and honorable rule of reviewing is, for the critic never to say *of* his author, what he would shrink from saying *to* him. But to that rule of magnanimity

and fairness, *defamers* are strangers. Like the dastardly assassin, they strike from behind.

The reviewer is moreover no less wanting in justice and candour toward Professor Gross, than he is in courtesy and observance. The Professor has not stated, "*as a positive truth*" his *belief* that "all organic diseases are the result of inflammatory action"—though the covert and disingenuous insinuation of the reviewer is to that effect. He has, in his own words, offered it only "as a general proposition, *liable to few exceptions.*" He has no where pronounced it *free from exceptions.* As T. S. therefore justly insists on accuracy in Professor Gross, he ought to sanction and strengthen his exaction, by exhibiting an example of acccuracy in himself. Before he troubles himself to brush the motes out of his neighbour's eye, let him drag the beam out of his own. But of his blindness and blunders more shall be said hereafter. Again.

PROFESSOR GROSS. "Most writers seem to me to have attached too much importance to them" (the *phenomena* of inflammation,) "and too little to others; whilst they have entirely overlooked the fact, that they are always greatly modified by the nature of the tissue, in which the malady, of which they are the indices, is located."

REVIEWER. "If by *most writers* is meant most of those who have written *since the time of Hippocrates*, the assertion will not be denied; but if, as we naturally conclude, is meant most writers of the present day, it is unquestionably erroneous; for the modification of the phenomena of inflammation, according to the tissue affected, is now so universally admitted and appreciated, as to constitute it one of the most important and prominent features of modern medicine."

To readers of good breeding and discernment, we need not remark, that the two or three first lines of this extract are designed by the reviewer to express one of those conceited, coarse, and impertinent sneers, which are so frequently uttered by ill-bred boys, and rude clowns, when they would fain

be thought witty. They amount to an out-break of *positive vulgarity!* The whole extract however would be unworthy of notice, were it not that it is characteristic of the snarling and affectedly jeering spirit, which the reviewer has manifested from first to last, in the composition of his paper—a spirit which, having led him, in violation of the decorum of letters, and the sanctity of truth, to attempt the degradation of the books he had before him, has degraded himself. Nor is this all. T. S. has here been guilty of *equivocation*.

Of "*most*" of the works that "have been written since the time of Hippocrates," we presume to know but little. Yet it is quite possible, and perhaps probable, that we know more than the erudite reviewer. Be this however as it may, we *do* know, and he *ought to* know, enough of medical literature (holding as he does the *high post* of COLLABORATOR to the American Journal, and perhaps other titles to distinction, not yet revealed to us)—thus *bedizened* in his *star* and *garter* of medical glory, he *ought not* to be ignorant of the fact, that, in *nearly* all the books written, until a quite *recent period—the period*, we mean, of the labours of Bichat—no competent notice is taken of the "modification of the phenomena of inflammation according to the tissue affected." At present we recollect no such notice in any work composed anteriorly to that time. The reason is plain. Prior to that date comparatively little was known about the distinctive characteristics of the different tissues—not to say about the *existence of* several of them. The hypercriticism of T. S. is therefore, if not in the manner of an *equivoque*, at least as unsound, as his temper is captious, and his disposition at war with candour and justice.—How again can a more direct and impudent indignity be offered in words, than is contained in the follow-

ing fragments of a paragraph, which is grossly insulting, from beginning to end!

"Were our author" (Professor Gross) "*better acquainted with the laws of abnormal action* (the italicized words are another *taunting repetition* of the Professor's own language,) and had he studied morbid anatomy *less exclusively* in the *dissecting room*, and been a *patient observer* of the symptoms developed during life, he would hardly, we think, have penned the above paragraph." * * * * "Were these opponents (of Professor Gross) disposed to retort, they might perhaps tell him, that *his mind was not sufficiently philosophical to comprehend fully the terms of the question*, or to make a distinction between a lesion being essentially dependent upon inflammation, and its being at times more rapidly developed or hastened in its course by this cause."

Each of these quoted "fragments" is sufficiently *abominable;* but the first, in particular, carries on its brow a brand of infamy, as deep and indelible as was that on the brow of the FIRST FRATRICIDE. And, if such be the *fruit*, what should be said of the *weed* that produced it! To this question, let others reply. Our concern is with the base and mendacious insinuations of the reviewer, respecting the personal qualifications of the writer he has slandered.

In the face of those insinuations, which, in every element, are irredeemably false; and, in the face of the calumniator, who had the audacity to pen them, we confidently aver, that Professor Gross has studied the subject of his work most faithfully and laboriously, in the sick-room, as well as in the dissecting-room. He has therefore been "a patient observer of the symptoms developed during life," the causes of which he has so successfully sought for, by dissection after death. In proof of this, we could adduce an abundance of conclusive testimony, could we stoop to a grave and formal contest, with T. S.—a writer, whom we can recognize, at present, in no other capacity, than that of a reckless traducer of merit;

and who, to make the most and best of him, knows nothing of the medical career of Professor Gross—whether he studied "Pathological Anatomy" in the sick-room or the dissecting-room—in public hospitals or private dwellings. We, however in common with hundreds of others, do know something of the matter, and are prepared to testify, that he has faithfully and accurately studied it in all of them. Yet has T. S., without a shadow of testimony to sustain him, overwhelmed himself in the disgrace of an illiberal and unmanly insinuation to the contrary! Under these circumstances we sincerely trust, and shall even venture to implore those concerned in the matter to that effect, that, before any farther efforts shall be made, formally to erect the American Journal into a NATIONAL ORACLE, duly commissioned to announce to the Old world, and to the *whole* world the condition of the profession of medicine in the New—before the consummation of this national enterprise be farther attempted, we would most earnestly invoke the learned Editor of the American Journal, to strike from his roll the name, and dispense with the farther services of every collaborator, who writes on topics of which he is ignorant, disregards truth, and obeys passion and prejudice instead of reason and judgment; and, more especially, who, in contumacious rejection of these, and all other like considerations, strenuously endeavors to cover with disrepute the *most useful work* on Pathological Anatomy, now extant in the English language—and, as we verily believe, *in any language*. And the work thus slandered being an *American* production, the slanderer is the more deeply unworthy to minister, as a sarcerdotal functionary, at the shrine of the American ORACLE IN MEDICINE.

Once more. "All," says the reviewer, "that is valuable in the

work (Gross's Elements) might, with advantage, have been comprehended in *half the space* it now occupies."

This charge can receive but one answer. IT IS UNTRUE. The work does not contain more matter than is requisite to fit it for the end for which it is intended. Nor does it contain any thing irrelevant to that end. Or if it does either the one or the other, or both, T. S. will equally oblige and instruct us, by specifying in what the surplus or the irrelevancy consists. And though we do not pronounce the style of it faultless, nor say that it might not be somewhat condensed and abbreviated, by the labour of pruning; we do say that it is neither unusually verbose, nor exceptionably diffuse. We venture to add, that, in these faulty qualities of style, it falls far short of many more medical publications than it surpasses. And we further add, that, in proportion to its extent, there is less superfluous verbiage in it, than in the tirade of the reviewer.

If there be, we say, in the "Elements," any amount of redundant matter—any thing we mean that does not belong to Pathological Anatomy, and that is not calculated to increase the value of a work on it, the reviewer is again invited to point it out. We urge him the more earnestly to this effect, in consideration in particular of the sentiments he has expressed on two occasions. Pathological Anatomy he observes, "takes cognizanse of *every morbid alteration going on in the economy.*" If this statement be correct (and we admit it to be so) it gives to the outline of the science a latitude, which cannot, we confidently assert, be *redundantly* crowded by the *whole* of the contents of Professor Gross's "Elements," much less sufficiently filled by the *half* of them—the compass within which T. S. asserts the work should have been restricted. Again he observes;

"Should another edition (of the Elements) be called for, we trust the author will take advantage of this to *prune it of its redundances.*" Let him, we repeat, specify those redundances, and *prove* them to *be* so; and we venture to pledge ourselves for their removal, in "another edition" of the work, which we cannot doubt will be shortly called for. We ask T. S. the more especially to point out the surperfluous matter, because we are fully convinced, that nobody else will be keen-sighted enough to detect it. Objects well suited to the microscopic eye of the wren, escape the lordly glance of the eagle.

The reviewer is also challenged to analyze, in a scholar-like manner, a paragraph or two, promiscuously taken from the same publication, and show wherein they posses a superabundance of words.

In doing this, T. S. will act the part of a critic, and be so far held faultless at least, if not praiseworthy, in his vocation; while the course of sweeping and indiscriminate condemnation which he has pursued, in the case before us, constitutes him a *reviler*, and attaches to him the ignominy of that odious office.

From a willingness moreover to share in the trouble and labour, as well as in the responsibility of the critical analysis thus challenged and demanded, we here present T. S. with an extract from the "Elements of Pathological Anatomy," on which his acumen and skill in his calling may be fairly tested. It is taken from Vol. II p. 245, the first place, at which the book fell open, when we took it up, and is not therefore a selected passage.

"The symptoms of carcinomateus disease of the stomach are never so urgent when the lesion is seated near the cardiac extremity, as when it involves the pylorus. In most cases, the signs are

those of chronic irritation; that is to say, the patient is affected with indigestion, lancinating pain, constant acidity and flatulence, and occasional vomiting. There is considerable emaciation, with gradual wasting of the muscular powers; the eye is sunk, the complexion sallow, and, toward the last, the matter ejected from the stomach has a very offensive smell, and a dark colour like coffee-grounds. These symptoms it is obvious are not diagnostic; nor should they ever be so regarded, unless the schirrous tumor be at the same time perceptible by the hand placed upon the abdomen."

We repeat our request that T. S. will be so obliging as to enrich us, with a portion of the stores of his critical skill, by pointing out the redundancy of style in this paragraph—But he will not, because he cannot bestow on us the favour. The style is *not* redundant. Yet it is the common style of the work.

If then he cannot point out, in Professor Gross's work, a redundancy or irrelevancy of either matter or style, on what ground has he pronounced it *too voluminous, by half its size?* The answer is plain, and may be easily rendered. He is hostile to the work, or its distinguished author; or perhaps to both—or possibly to the school in which the author was educated—or to that in which he now holds a chair.—Or has he set a *price* on the "hebenon" of his inkstand, and penned his effusion for *pecuniary hire?*—If neither a part nor the whole of these motives, be the cause of the calumnious assault by T. S. on Professor Gross's Elements, we leave to himself to avow the cause, or to conceal it at option—wholly regardless of the course he may adopt.

Though we could easily cite, perhaps by the dozen, other impertinent and insulting passages, in the reviewer's pasquinade, we would hold ourselves unjustifiable in dwelling on them any longer. Nor should we have ever condescended to notice them at all, on account of any qualities inherent in themselves. All that is *intrinsic* to them is but matter for con-

tempt; and, in a case like the present, that sentiment would be most becomingly expressed by silence. They are indebted, for our notice of them, exclusively to the Journal, whose pages they disgrace. Nor will even that Periodical, NATIONAL as it is proclaimed to be, by those who have the most *substantial* interest in it, be able long to give weight or influence to articles so rank in falsehood, and so encumbered by other repulsive qualities. Instead of its elevating them to the level it should strive to maintain, they will, if frequently admitted into its pages, inevitably drag it down to their *own level*. By dint of talents and learning alone, no Journal can rise to distinction, and maintain its standing. Unless it be founded in truth and justice, and conducted with courtesy, its fall is inevitable. Partiality in science is, if possible, even more reprehensible and repulsive, than denunciation in politics, or persecution in religion.

But we are not yet done with T. S. and his review. We have now to advert to a few of the mistakes and blunders in doctrine, opinion, and reference to authorities, which he has committed, in the course of his animadversions on Gross's Elements. And here, instead of treating him in a spirit of retaliation, by meting to *him*, as he has meted to *others*, we shall extend to him that measure of justice and fairness, which he has withheld from the author of the AMERICAN SYSTEM OF PATHOLOGICAL ANATOMY.

Our remarks under this head of our subject we shall preface by observing, in relation to the charges by T. S. against Gross's Elements which we are now about to notice, that, were they all true, so abundantly petty and meagre are they, that they would amount to but very little, on the score of censure or condemnation. Their relative standing would be but that of spots on the sun, contrasted with the bright and

multiplied masses of merit, by which they are surrounded; and which T. S. has passed over in silent neglect—perhaps because they are too extensive for the field of vision of his *microscopic eye.* We shall briefly advert to them, in the order in which they are presented in the review.

The first topic to which we shall here refer, is one in which the reviewer charges Professor Gross with error, in his views respecting tuberculous matter. The charge embraces three or four several points—the ingredients or elements of which that matter consists—whether it is originally deposited in a liquid, or a solid form—what, on the first of these points, is the opinion of Gendrin—and whether Broussais considered tubercles to be "lymphatic ganglions" enlarged by inflammation. On each of these points the reviewer contends that Professor Gross has involved himself in error; although the Professor has given an express opinion on only *one* point out of the four; and in that *he is correct.* It relates to the opinion of Broussais respecting tubercles;—whether or not they were held by him to be glands preternaturally enlarged. And if T. S. will turn to that distinguished writer's History of Chronic Phlegmasia, Vol. I, p. 42, Hays & Griffith's translation, Philadelphia, 1831, he will there learn that the author *did* regard tubercles as nothing more than *enlarged lymphatic ganglions.* We beg him to reperuse the volume, for his farther instruction (if indeed he has ever perused it) and save us the trouble of extracting the passage.

As regards the opinion of Gendrin on the composition of tubercular matter (the leading object of the reviewer being, from his own acknowledgement, to fasten error on Professor Gross in relation to that point) the following is all that the "Elements" contain on the subject. And it is a mere *narra-*

tive or *statement of facts*, containing nothing in the form of *positive opinion*—nor even of hypothesis.

"The chemical, physical, and anatomical characters of this matter (tubercular) all conspire to show its similarity with the coagulating lymph, as it is revealed to us upon the free surface of the serous and mucous textures, in the various splanchnic cavities, upon the surface of a recent wound, or a granulating ulcer, and finally upon the surface of the crassamentum of blood, taken from blood affected with inflammation. From the well-conducted researches of Dowler, *Gendrin*, and Bretonneau, it clearly appears that the substances found in these different situations are all composed essentially of albumen, fibrin, and gelatin, in varying proportions, there being sometimes a predominance of one, sometimes of the other."

This, we repeat, is all that Professor Gross has said respecting Gendrin and his opinion, touching the composition of tubercular matter. And if T. S. can see in it aught that is unjust, or in any way exceptionable toward that distinguished pathologist, he is much more lynx-eyed than we are. Whether Gendrin subsequently changed his views on this subject, we do not now remember. Nor, immaterial as it is to the point at issue, shall we trouble ourselves to inquire.

As respects the contest on the form or condition, in which tubercular matter is originally deposited—whether liquid, semi-liquid, or solid—we shall only observe, that, if not frivolous, it is certainly *bootless*, in the present state of pathological science. The immediate mode of nutrition and growth, morbid as well as healthy, is as yet a concealed point, which neither T. S. nor ourselves are prepared to disclose. We shall therefore decline all effort toward that effect; and it will not perhaps be unwise in him to do the same—at least until farther research shall have better qualified him for the intricate task—or until he shall have duly resorted to animal magnetism, or some other new fangled source of revelation, and

knowledge. His *prevoyance* on the subject at present, we have reason to believe is exceedingly limited. We shall only add, that nothing short of a *settled resolution* to make war on Gross's "Elements," should it be even a *musquito-war*, could have tempted T. S. to labour in a matter so puny and unprofitable.

The cutaneous affection, *porrigo*, is made the ground of another attack on Professor Gross and his "Elements." Respecting that disease the reviewer pronounces him mistaken on two points—the classification of it—and the opinion that it is contagious.

Here again nothing is positively settled by pathologists—some favouring and others opposing the classification of Professor Gross; and some pronouncing the affection contagious, while others deny it the possession of that quality. And, in professional eminence, and perhaps also in number, the contending parties are about equal. The Professor therefore only concurs with one party, and the reviewer with the other. His *own self-supposed infallibility* moreover excepted, the latter has adduced no shadow of proof that he is right, and the former wrong. And fortunately we live in an age and a country, in which the apothegms, that the *Pope is infallible*, and that the *King can do no wrong*, are rejected as assumptions, marked alike with inanity and arrogance. Nor is it probable that the pretensions of T. S., the reviewer and collaborator, to the same effect, will be received with more favour, or spurned with less contempt. When *he* shall have learnt to rely on fact instead of fancy, and to deal in demonstration instead of dogmatism, *others* will perhaps rely on *him*—not before.

On the diseased condition in general of the arachnoid membrane, respecting which Professor Gross is charged by the

reviewer with sundry mistakes, we are not prepared to speak with confidence; because we have not satisfactorily studied the subject. As regards one point in the matter, however, we *are* thus prepared. Long before the researches of Drs. Gerhard and Rufz, all reading and enlightened physicians, were familliar with the fact of the frequent existence of tubercles in the arachnoid membrane, accompanying their existence in other tissues. Wherefore then has T. S. so boldly asserted, that to those two pathologists (Drs. Gerhard and Rufz) "we are especially indebted for our knowledge of *the coexistence of tubercles* of the archnoid with those in other parts of the body!" Was it because he knew no better, and supposed other people as ignorant as himself? was he himself more correctly informed, but fancying others to be ignorant, did he attempt to palm on them what he knew to be a falsehhod? did he write merely to eke out a sentence, reckless alike of its falsehood or truth? or did he act in obedience to some other motive more congenial to him, because more dishonorable? We await his reply, and shall believe or not, according to circumstances.

Of the merits of Dr. Gerhard, as an ardent and successful cultivator of pathological anatomy, none think more highly than we do, or are more willing to award to him the commendation he deserves. And the measure of that commendation we acknowledge to be ample. But we cannot consent to be witnesses of an unjustifiable project to use his name, in derogation of the well-earned reputation of Professor Gross, without coming promptly to the rescue, and earnestly endeavoring to avert the mischief. Nor has Dr. Gerhard, we feel confident, countenanced the project. In confirmation of our belief to this effect, we are gratified in being able to refer to a notice of the "Elements," very different in

character from that by T. S., which appeared, some time ago, in the "Medical Examiner," and has been generally attributed to Dr. Gerhard's pen.

Another charge against Professor Gross, designed to be rendered as disparaging to him, as possible, is, that he has "*compiled loosely*" and incorrectly on the softening of the brain; because he has alledged that M. Rostan has ascribed it to *inflammatory irritation*. Now, in proof of the correctness of such an allegation, on the part of the Professor, we submit to the reader the following extract, from a Paris edition of Rostan's work.

"Malgré toutes les raisons que vous venons de donner en faveur de la natur inflammatoire du ramollissement cerebral, nous ne saurions croire qu'il soit *constamment* l' effet d' une inflammation."

What, we ask, is the true interpretation of this extract? and but one form of answer can be returned; which is to this effect. Though M. Rostan did not believe that softening of the brain was, in *every case*, the result of inflammation of that viscus; he admitted it to be so in *most cases*. If such be not the true exposition of the clause, we resign all pretension to an ability to expound.

Another topic on which the reviewer enters a grievous complaint against Professor Gross, is the *obliteration of the bronchiæ*. In a memoir on that form of disease, M. Reynaud attributes the obstruction of the tubes to pressure from without—the presence of foreign bodies within their cavities—and, in certain cases, to what he calls a "coarctation" of their walls, and a transformation of them into solid impervious cords. For this transformation Reynaud confesses that he cannot even *fancy* a cause. But possessing more decision of character, Professor Gross has the intrepidity to believe

that he readily *finds* a cause in *inflammatory irritation*. To this he ascribes, with entire correctness, as we believe, the obstruction of the tubes, by the thickening of their mucous lining, and by fibrinous adhesion of their internal surfaces. This promptitude of Professor Gross T. S. calls, with a due amount of ancient wisdom and gravity, a *cutting of the Gordian knot*. The reason of his dissatisfaction is plain. He defers to no authority in medicine, except that of a *foreigner* or a *Philadelphian*. And, least of all, will he defer to a *man of the West*, whose authority he probably reads wrong end foremost, and considers it even an *evidence of error*, from his classical remembrance, that, among the ancient Romans, "*Punica fides*" meant deceit.

Seriously; to what else than inflammatory action, acute or chronic, can T. S. or any other medical casuist ascribe the obstruction of an air-tube from a thickening of its mucous lining, fibrinous adhesion of its internal surfaces to each other, or a contraction, or, if he likes the term better, as being more *outlandish*, a *coarctation* of its walls? We should be gratified by his reply; because it might suggest to us something new; as we confess ourselves at a loss for any cause other than inflammation, for the production of such effects. But perhaps he is afraid to reply to our question, lest, in so doing, he might subject himself to M. Rostan's rebuke, of which he tells us, on account of analogical reasoning. If so, his condition is pitiably barren in promise. For, to whatever extent his frigid cautiousness may protect him from error, it will never render him a successful discoverer of truth. The efficient explorer of the *terra incognita* of science, must be as fearless and enterprising as a pioneer of the wilderness.

In another part of his review, T. S. comes down on Pro-

fessor Gross with an avalanche of wonder, and no less of censure, because he declines believing, in direct opposition to the evidence of his own senses, that a hepatized lung always and necessarily sinks in water. We say "in opposition to the evidence of his own senses;" and we mean what we say. On this subject, the Professor is not to be regarded, and spoken of, as a mere *reader*. He is also an *experimenter;* and we know that he has experimented *extensively*, and we have reason to believe accurately; because a turn for accuracy, if we mistake not, is one of his master qualities. And for the *truth* of his statements he is *above suspicion*. Under these circumstances, we cannot hesitate to admit the entire truth of the following extract, taken from a letter, received from the Professor within the last few days.

"To be serious, I can solemnly assure you, that, up to the publication of my work" (the Elements of Pathological Anatomy) "I never witnessed the sinking of the lungs in water, from hepatization, *in a single instance*, notwithstanding that I made repeated trials, both with the lungs of the human subject, and with those of the inferior animals, especially the horse. *Since that time* I have witnessed the circumstance *once*."

In this case Professor Gross has chosen to believe and report what he has himself done and witnessed, rather than what he has only read of, and heard of from others. And every man of independence and intelligence does the same—We have said that the Professor has "*chosen* to believe." But we retract the word "chosen," and replace it by *been compelled*. To man the clear testimony of his senses is *omnipotent*. His mind, if it be sound, can no more resist it, than his body can endure the thunder-stroke with impunity.

Much might be said, in exposition of this subject. But we may not dilate upon it. With the experiments of Professor Gross, some deceptive circumstances *might* have been con-

nected. But it is equally probable that deceptiveness might have hung on the experiments of others. The question therefore of the sinking of hepatized lungs in water is still *on trial*, and can be settled only by subsequent experiments. And before T. S. assumes again consequential airs, or stalks into dogmatism on the subject, it might not perhaps be amiss in him to exchange the character of a rude and conceited reviewer, for that of a modest and patient inquirer.

In noticing the attack of the reviewer on Professor Gross, for some reputed mistake or blunder, on the subject of *interlobular* emphysema, we shall only remark, that the blunder *is his own*—whether *intentional* or *inadvertent*, we shall not pause to inquire. By misquoting the Professor, he has converted a clause of *good sense* into one of *nonsense*—and then made his comments on his *own handiwork!* Let him examine the passage, and he will find us correct. Such is his triumph, and such the means of its achievement! And they are both alike worthy of him.

The next attack on Professor Gross, by the reviewer, is on the subject of *pulmonary apoplexy*. And, may we judge of his meaning by his remarks, we can hardly persuade ourselves that he has any clear or definite knowledge of the real import of the terms he employs. It seems scarcely probable to us, we mean, that he understands correctly what it is that constitutes pulmonary apoplexy. If he does thus understand it, we certainly do not understand him.

In illustration of a position of which he is treating, the Professor describes one of the best defined and most striking cases of pulmonary apoplexy that stands on record. And the reviewer, in a manner peculiarly offensive, denies that it is pulmonary apoplexy at all. The ground however of his denial he consequentially conceals—intimating perhaps that his

very thoughts, though he gives them no tongue, speak notwithstanding with marvellous eloquence, and convincing argument! In proof, as far as the highest authority can be so considered, that the disease recorded by Prof. Gross, was a case of genuine pulmonary apoplexy, Prof. Cruveilhier, of Paris, has described affections precisely similar, and bestowed on them the same appellation. The descriptions are contained in the Dictionaire De Medicine et De Chirurgie Pratique, published in 1829, and are as follows:

"It is not uncommon to meet in pulmonary phthisis, ***especially in consequence of hemoptysis***, large apopletic accumulations, around tubercular masses, in different stages of their development." Again says Cruveilhier:

"There are ***consecutive pulmonary apoplexies***, as, for example, when an aneurism of the aorta bursts into the substance of the lung. The blood which under these circumstances diffuses itself through the parenchymatous structure, is ***either expectorated in very great quantities***, or it escapes into the pleuritic cavity."

Yet, in the very face of these, and many other similar statements that might be adduced, T. S., if we do not misunderstand him, denies that pulmonary apoplexy can be produced by a *hæmorrhagy*, especially if the blood flows from the rupture of a large vessel. As if cerebral apoplexy is not frequently the result of *extravasated* blood compressing the brain, as well as of blood preternaturally accumulated in unruptured vessels!

So preposterous, we repeat, is the notion we have here imputed to the reviewer, that we are positively apprehensive of having mistaken his meaning. If so, the mistake is *real*, not *affected*. For we disavow all intention of doing him injustice.

The reviewer, being apparently quite anxious to make a parade of his intimacy with every thing that bears relation to

M. Louis of Paris, has censured Professor Gross's work, on account of its misdating a memoir by that gentleman, on the softening of the gastroenteric mucous tissue. *And the mistake was but a trivial misprint,* which arose from the fact that the Professor did not himself correct the proof sheets of his "Elements," in their passage through the press—the work being printed in Boston, while he was in Cincinnati. For this the reviewer, resolved to collect and proclaim to the world every error and inaccuracy of the publication, whether great or small, accidental or otherwise, had not the liberality (we should rather say the *justice*) to make the slightest allowance. Hence his carping complaint, that the memoir of M. Louis, just referred to, and which was *really* published in 1825, is stated in the Elements to have been published in 1829! This, we repeat, is an *error of the press.* But, in the mean time, T. S. committed a *positive* error *of his own,* by asserting that the memoir of M. Louis was printed in 1826!—This, we acknowledge, is altogether an exceedingly *small* affair. And we have condescended to notice it only to expose the captious temper of the reviewer, and the grovelling kind of warfare which it was his pleasure to institute, against, the "Elements of Pathological Anatomy." We beg the reader to excuse us for the trouble we have given him in perusing the statement. Nor will he perhaps very seriously condemn T. S. on account of the Lilliputian size of his *war-weapons,* but make for him all due allowance, especially when he recollects that *little things are great to little men!*

A few remarks on one point more of cavil and censure by the reviewer, and we shall be done with the subject. It is his accusation of Professor Gross of having neglected to notice, with the fulness and respect to which they are entitled, the discoveries of Dr. Gerhard in Pathological Anatomy.

And his leading reason—that one at least which he urges most strenuously, why such notice ought to have been taken is, that *Dr. Gerhard is an American.* Nor do we either deny the soundnes of that reason, or wish, in any degree, to detract from its force. On the contrary, we admit it, in both respects, to its full extent.

In the present case, however, it is a two-edged sword, cutting in each direction, and falling, (to say the least of it) with fully as much force on the reviewer, as on Professor Gross. The latter gentleman is an American, as well as Dr. Gerhard. Why then did not T. S. remember this, during the time of the composition of his review, and allow the recollection to mitigate, in some degree, the spirit of detraction, with which he so unsparingly assailed the Professor! Does he regard it as a mark of disrespect or hostility in Professor Gross toward Dr. Gerhard, that he did not do *entire justice* to his pathological labours and discoveries? How loud would have been his complaint then, and how fierce his denunciation of the former gentleman, had he not only neglected the latter, and withheld encomium from him, but made him a subject of disparagement and calumny! In such a condition of things, may we judge from what has already occurred, the resentment of the reviewer would have been incontrollable and boundless, venting itself, if not in the most boisterous, at least in the deepest and deadliest anathemas. Of Professor Gross's failure then in respect and justice toward the Americanism of Dr. Gerhard, (if indeed he *has* failed) T. S. ought to be the last person in the community to utter a complaint. The Professor moreover is still further censured, because, while he passes Dr. Gerhard, though an American, with but little notice, he quotes respectfully European writers of less merit. To this we reply very confidently, that however

courteous Professor Gross may be, in his references to foreigners, he defers to none in the style of *semi-adoration*, which the reviewer manifests especially toward *Dr. Louis*, whom he all but *idolizes!* In truth, though the standing of *that physician* is deservedly high, and his merit, *in some respects*, unsurpassed, the amount of incense burnt to him is excessive. And if we are not mistaken in the import of certain indications, which we think we perceive, his popularity and sway in the schools of Paris, are already on their wane. He is too *exclusive* in his doctrines; and, while professing to have *no theory*, he is one of the most inveterate and uncompromising theorists and dogmatists of the day—or of any day. And, as a *practitioner*, he has the reputation of being *proverbially unsuccessful*. Still is he, especially in the estimation of a certain American sect in medicine, the *beau ideal* of a finished æsculapian!

A few observations on *the particular discovery* of Dr. Gerhard, for his silence respecting which Professor Gross is most severely censured by the reviewer, may not be amiss. It is that of the *actual distinction* between *typhous* and *typhoid* fever.

Is it true, that Dr. Gerhard has made this discovery? Is such discovery, whether made by him, or by any other inquirer, *positively in existence?* Is the *essential* distinction between those two forms of fever *more certainly* known now, than it was at the beginning of the nineteenth century? Stronger still; *is* there an *essential* distinction between them? Or are they any thing more than different forms of the same complaint? That these questions, if propounded to different pathologists of the highest standing, would elicit different and contradictory replies, cannot be questioned. Already have sentiments been uttered by such pathologists, in all re-

spects tantamount to such replies. The question therefore is yet unsettled.

Our favourable and high opinion of Dr. Gerhard has already been openly and sincerely expressed. And we here reiterate it. But we hold it at least exceedingly doubtful, whether his discovery, in the pathology of typhoid fever, of what is regarded as the *cause* or *root* or *essence* (or by whatever other name it may be called) of that complaint, be any thing but the detection of a *concomitant* of it—a mere lesion *produced by* the disease, instead of *itself producing* the disease.

That certain intestinal glands are found to be *generally* in a morbid condition, in patients who have died of typhoid fever, is not denied. But is it certain that they are *as generally* in such condition, at the commencement of the fever? and produce it through the instrumentality of that condition? No, it is not. On the contrary, there is reason to know that the glands referred to are *not, in every case,* morbidly affected at the beginning of the complaint; and that they cannot therefore, in every case, act as its cause. In corroboration of this, it may be mentioned, that, in some cases of typhoid fever, in which the most careful inspection was held after death, the glands of Peyer were in a natural condition—neither ulcerated, inflamed, nor in any perceptible degree deranged. And even *one* such case is *fatal to the doctrine.* The *cause must* be present, else the *effects* can never show themselves. And this is as true of disease, as of any thing else. The existence of a single case therefore, we repeat of true typhoid fever, without any morbid affection of the glands of Peyer, proves conclusively, that when such affection occurs, it is a concomitant or symptom of the disease, instead of its cause. Besides; it would be no easy matter even to *conjecture,* in what way the morbific

agent, productive of typhoid fever, be it what it may, can reach Peyer's glands, without injuring other parts in its passage.

The existence moreover of a radical and essential distinction between typhoid and typhous fever, is by no means established. Far from it. Assuredly the external manifestations or symptoms of the two affections do not lead to a belief in such existence. They are much more favorable to the doctrine of their being but different forms and degrees of the same affection. Typhous and typhoid fevers exhibit fewer and less striking traits of dissimilarity, than do *quartan* and *quotidian* intermittents; or than scarlatina *simplex* and scarlatina *maligna*. Yet are the varieties of the *two latter* diseases considered as *only varieties* of two complaints, instead of being themselves *original complaints* essentially different.

Again; Dr. Gerhard's investigations of the pathology of typhoid fever have been limited, if we mistake not, to the Blockley Hospital, near Philadelphia. But that great and excellent establishment is an asylum of charity. Most of the patients therefore, that crowd its wards, are paupers, shattered, exhausted, and debased, by habits of intoxication, and indulgences in other sorts of intemperance and debauchery. That these agents therefore must act as modifying causes of their maladies cannot be doubted. Hence, though Dr. Gerhard may have unfolded, and no doubt has, *somewhat* of the pathology of the typhoid fever of Blockley Hospital; it by no means follows that he has disclosed the *entire pathology* of that complaint in every hospital and locality where it may prevail. It is not at all certain, we mean, that he has disclosed what we would call its *essential* pathology. For, that diversities of climate and country, situation and condition of life produce, in the same diseases, great diversities in

symptoms and lesions, is a maxim as undeniable, as that which affirms things equal to one and the same thing to be equal to one another. As yet the pathology of typhoid fever is known *but in part.* And whatever benefits Dr. Gerhard's researches on that subject may have conferred on science, or whatever honors they may have won for himself, (and none of his countrymen are less inclined than ourselves to cast a shade on either) it may notwithstanding be found hereafter, that more importance has been ascribed to his *discoveries*, than they actually merit.

Once more. In still farther corroboration of the opinion just advanced by us, we are sustained by positive and high authority in asserting, that Peyer's glands have been found deeply deranged, in cases which had not been marked by a single symptom regared as *pathognomic of typhoid fever.*

Finally: we are aware of the existence of a strong probability, that, in consequence of the spirit and sentiments which mark this paper, we shall be charged, by certain characters, with the design of kindling the fire of discord between the medical Faculties of the eastern and western States, and arraying them against each other, as partisans at least, if not as actual and open enemies. But the charge, if made, will be utterly groundless. One of our leading objects is, to rebuke the principles, defeat the measures, and avert the meditated mischief of the Philadelphia *clique*, to which we have already adverted; and the effect of whose *conspiracy*, if not checked and extinguished, will inevitably be, to produce the discord and hostility, to which reference has been made.

Our earnest and fixed desire is for peace, harmony, and fraternal regard, between the physicians of the East and the West. And for the promotion of that most desirable state of feeling and relation we are determined to labour. But its

basis must be formed of the proper materials, else it will be worse than warfare, and cannot endure. It must be founded on justice, mutual respect, and an equality of rights. There must be no affected superiority, or domineering spirit manifested in the East, under the expectation of meekness, submission and tolerance in the West. Reviewers *there*, must not, because they reside on the waters of the Atlantic, so far transgress the landmarks of their calling, as to convert *criticism* into *calumny*, in relation to medical productions *here*, merely because they have been written on the waters of the Mississippi.

In a word, let the great and respectable body of the medical Faculty in the eastern States, rebuke the insolence, and restrain the licentiousness of all such traductive reviewers as T. S., that may maliciously hiss and flicker their forky tongues among them, against western medicine—let the Faculty of the East do this, and none shall more promptly than ourselves extend to them cordially the hand of friendship—and never withdraw it again, except for a reason that shall justify the act. But, as long as their *so-called* reviewers shall be permitted by them, unadmonished and unchecked, malignantly and slanderously to assail medical writings and their authors in the West, we shall continue our aid to *chastise* them, and our endeavours to *crush* them. And, as far as their influence, on the waters of tho Mississippi is concerned, they *will* be crushed.

It was our intention to have noticed in this paper certain points of doctrine and opinion, which are found both in the "Elements" of Professor Gross, and the *tirade* of his assailant, in which we are not prepared to concur with either party. But we have already so far transgressed the bounds allotted to us, that we must here close our article, and shall probably resume the subject on a future occasion. C. C.

Selections from American and Foreign Journals.

On the Operation for Strabismus. By Professor Dieffenbach.—Since my first communication on this operation, it has had such a general reception, and has acquired such an importance as I did not at that time anticipate. Upwards of three hundred cases have been operated on by me within a few months, and both in Berlin and in other places my proceeding has been frequently imitated. I propose to give here a short general view of the results of my observations.

The youngest individuals in whom I have undertaken the division of the shortened muscle of the eye were five years old; the oldest were upwards of forty.

Sometimes one, sometimes both eyes squinted, and the operation had generally the same favourable result in both cases. When both eyes were affected, I either operated first on that which squinted most, and when that was quite well on the other, or else on both at the same time.

Squinting inwards, from shortening of the rectus internus, was by far most frequent. Sometimes the trochlearis muscle was also shortened, so that it was necessary to divide it as well as the rectus. In the whole number of those I operated on there were only a few who squinted outwards, and still fewer in whom the eye was directed upwards, or upwards and inwards. I found no eyes at all that squinted downwards.

Strabismus upwards was sometimes complicated with blepharoptosis. The division of the rectus superior not only cured the squinting, but the ptosis gradually diminished after it.

Strabismus outwards or inwards was often complicated with nystagmus bulbi. After the division of the external or internal rectus, not only did the squinting cease, but in general the nystagmus also. In other cases, however, the latter was

persistent, and did not decrease till after the division of the rectus superior, or obliquus superior, or rectus externus.

When cataract and strabismus co-existed, the operations for both were done at the same time, and the result was in every case favourable to both.

In most of the patients the strabismus had commenced in very early childhood after ophthalmia neonatorum, scrofulous inflammation of the eyes with ulcers on the cornea, or after acute exanthemata, &c. In many there were cicatrices on the cornea or cataracta centralis. In cases of the former kind, in which hitherto artificial pupils would have been made, the operation was attended by success and considerable improvement of the sight.

All those who had strabismus of only one eye saw more weakly with it than with the other; in those who squinted with both eyes, that which was turned least, was usually the stronger. The weakness of the one eye had been observed by only a few of the patients; they had naturally looked only with the better eye, and the other had been unemployed. The operation completely cured the weakness of sight; some who had actually amaurotic amblyopia could see clearly directly after it was performed.

Some of the patients, previous to the operation, often saw double; this defect continued for some time after it, and then gradually ceased. Some others who had never seen double before did so immediatelv after the operation. These had been in the habit of looking only with their strong eye while the other had been unused. The improved position of the latter compelled it to see; but the double vision was subsequently lost.

Some who were operated upon did not see so well immediately after as before the operation; but after some exercise this weakness of vision ceased, and they could then see quite clearly. The cause of this was that when the eye was put in its normal position, a point of the retina, which was before unexercised, was now brought into play, and required some practice before it could fully discharge its functions.

Operation.—That for strabismus convergens is here taken as the type. The operator always stands on the right side of the patient, whether he be operating on the right or left eye. The patient sits on a stool, and an assistant standing behind him draws up the upper eyelid with a Pellier's hook. A second assistant draws down the lower eyelid with a double hook which is set in a handle, and of which the teeth are connected by a transverse piece. He kneels down before the patient so as not to be in the way.

The operator then puts a fine hook into the conjuctiva, at the inner angle of the eye, just where it is passing from the palpebræ to the bulb, passes it superficially through it, and gives it to a third assistant who stands on the left side of the patient. The operator next passes a second hook in the same way through the conjunctiva about a line and a half from the first. He and his assistant then both at the same time draw their hooks a little up, so as to raise a fold of the conjunctiva, and at the same time pull the bulb somewhat outwards. The fold is then divided with a pair of curved eye-scissors; and this cut usually at once exposes the tendon and the anterior part of the muscle. A couple of cuts with the scissors then expose the outer surface of the muscle; a rather blunt hook is passed under its tendon, and the two sharp hooks that held the conjunctiva are now removed; the eye is held completely in the power of the blunt hook, and is to be drawn by it from out the internal angle of the orbit. A flat probe is then pushed under the muscle; and the loose connexion by cellular tissue between it and the eye is broken up. The division of the muscle is made by the scissors already mentioned, either, first, through the tendon in front of the hook; or, second, behind the hook at the beginning of the muscular substance; or, third, some lines deeper back.

When the tendon is divided nothing of it remains on the eye, and the muscle commonly retracts a line backwards. When the muscle itself is divided at its anterior part or further back, its posterior portion retracts, and the anterior, which remains connected with the bulb, turns forward like a loose flap, which, according to circumstances, may be removed by the scissors, or pushed back into the wound if it is thought desirable that it should unite again with the posterior portion.

In practised hands the whole operation seldom lasts more than a minute; and it is done almost without pain. When finished, the eye is cleaned with cold water and a soft sponge. The after-treatment consists of cold lotions, and very great abstinence from food and strong drinks. The patient should be kept in a darkened room. In most cases the wound heals very quickly; and after a few weeks no traces of the operation remain, and the eye stands in its normal position.

The operation for internal strabismus is by far the most easy; the division of the obliquus superior for squinting upwards and inwards is more difficult; that of the rectus externus for strabismus divergens is more difficult still; and the

most difficult of all is the division of the rectus superior for squinting upwards. With respect to the manipulations of these operations, they are just the same as those for Strabismus convergens.

Remarks on the operation.—The fixing of the upper and lower eyelids with the elevator and the hook, so as to expose the whole of the anterior surface of the globe, is indispensable; for neither the will of the patient, nor the separation of the lids by the finger, can do this effectually.

The fixing of the globe can be accomplished only by fine hooks carried superficially through the conjunctiva; the seizing and elevation of the fold of conjunctiva by forceps, sounds more gentle than to do it with a sharp hook; but it is in reality far more painful, more injurious, and more insecure; the fold raised up by the forceps easily tears or slips from their grasp, and if the forceps are made with hooks, they wound as well as pinch the membrane. Two hooks must be employed to make the fold tense enough.

The great number of operations that I have performed, has given me opportunity of observing the phenomena that ensue subsequently to them, and their after consequences. The question here is only of internal strabismus, but any surgeon will easily supply the necessary modifications for the operations in the other varieties. In the first case, the eye, after the division of the muscle, goes into its normal position. In the second, it remains in some degree squinting. In the third, it turns outwards.—*Brit. and For. Rev., from Casper's Wochenschrift.—Medical Examiner for October.*

THE WESTERN JOURNAL.

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TO READERS AND CORRESPONDENTS.

This number completes our second volume. The first number of the third, will appear on the first day of January. We thank our friends for their numerous contributions, several of which are now on hand, awaiting an opportunity for publication. As our limits scarcely permit the insertion of all that we receive, we respectfully suggest to those who may favour us with communications to compose them in as condensed a style as possible. Whatever may be our own sins of diffuseness, we ask conciseness from others; beseeching them to follow our precepts rather than our example.

It must we think be admitted to be possible, indeed, we may affirm, quite easy, with a copious vocabulary of words, and an amplitude and diversity of illustration, ambitiously and profusely poured out, so to obscure a simple or uncomplicated idea, or bury up and deeply inhume, a small fact, that the reader, profoundly and thoroughly mystified and fatigued by his efforts at exhumation and development, shall, at length, endeavour to escape from the circumlocution in which he finds himself involved, by an ornate, laboured and ostentatious style, and in a moment of discouragement or despair, give up, relinquish or renounce the object, to which the annunciation of the

author had primitively or originally invited or drawn his attention; and concerning which he might, in the beginning, have felt and cherished a most lively, philosophical, and astute inquisitiveness. It is, also, possible to exclude from a paper every fact and thought not entitled to admission; to use words of definite meaning, and reduce them to the lowest number compatible with perspicuity; to arrange them with method; to lay down premises clearly and deduce conclusions forcibly; in short, to treat the reader, as a philosopher seeking for knowledge—not as a sciolist satisfied with words. To vary our phraseology, narrative calls for simplicity, and logic for compactness of style—and as every medical paper is made up of one or both these elements, it will, *cæteris paribus*, prove interesting, in proportion to the precision and vigour with which it is written.

D.

MEDICAL CONVENTION OF KENTUCKY.

On the 22d of November, 1839, the physicians of North Eastern Kentucky held a meeting at Washington, and among other resolutions adopted the following:

"*Resolved*, That this Association respectfully urge upon the physicians of Kentucky, the expediency of forming district and county societies, for the promotion of medical science; and also, that a State Convention be held in Frankfort, on the second Monday in January, 1841, for the purpose of organizing a State Medical Society."

As the time for the proposed Convention is approaching, we beg leave to invite the attention of our Kentucky readers, not only to the meeting, but to a consideration of the objects which ought to receive attention. The gentlemen who have called it, had in view the "organizing of a State Medical Society;" but when they and their brethren assemble, it will be as competent for them to do any thing else, as that which has been named.

The formation of district or county societies and a State Society, may be attended with benefits to the profession; but we are obliged to confess, that our observations on the *modus operandi*, and effects

of that organization, in a neighbouring State have not given us a very high opinion of its adaptation to the West. It was there kept up, as a kind of forced condition, for many years, during which no results were obtained that could, to a considerable degree, gratify any one who looked to more than mere formal meetings, thinly and reluctantly attended. We admit that this may have been less the fault of the system, than of the physicians among whom it was introduced; but it signifies little where the blame lies, if good fruits are not shed upon the community. A radical difficulty of this method is its complexity.

Another, exempt from this objection, is the voluntary meeting of any or all of the physicians, once a year, on the plan of the British Scientific Association, borrowed, we understand, from Germany. Such meetings might be held at Frankfort, or, successively, in the different large towns of the State, whereby all our brethren would be, progressively, included. A Convention of this kind would be generally attended, by a much larger number of the profession, than the meetings of a society composed of delegates, and its recommendations would, we are disposed to think, be more authoritative, while the simplicity of the whole operation, would be calculated to secure its perpetuity. We are, however, far from having formed a definitive opinion on the relative merits of the two methods, and have thrown out these hints for the purpose of exciting those who may design to visit Frankfort, to reflection on the subject.

That much might be done to arouse the profession of the State into greater activity, as well as to promote a feeling of brotherly kindness, and enkindle an *esprit du corps*, cannot be doubted. The question is as to the mode; and on this point, we trust that the respectable gentlemen who have proposed the meeting, for the second Monday of January, will come prepared with some well digested plan. D.

MEDICAL OBITUARY.

Dudley Woodbidge Rhodes, M. D. It is with grief that we record the death of this gentleman,—a talented physician and one of the most estimable citizens of Zanesville, Ohio. Dr. Rhodes was a

native of Stonington, Connecticut, and studied his profession in Hartford, under the direction of the late and much respected Dr. Mason F. Coggswell, the projector of the Asylum for the Deaf and Dumb in that city. During the last war with England, Dr. Rhodes entered the medical staff of the Army, and afterwards emigrated to Zanesville, where he continued in the diligent practice of his profession, to the time of his death, on the 18th of October last. Our acquaintance with him commenced in the autmn of 1815 when, a young man, he was but beginning his labours, in the town, where he afterwards became distinguished and beloved. He was then, what every young physician should be, amiable, benevolent, cheerful, temperate, studious, and devoted, in soul and body, to the interests of those who employed him. The fruits of these *semina* of character, were what they must always be, the esteem and respect of the community, its confidence, its patronage, and its grief when he died.

We saw Dr. Rhodes in the month of August last, when he did not appear to be in good health, but was diligently occupied in the duties of his profession. In this occupation he continued until about the 10th or 11th of October. On the 12th he sent for his faithful friend and pupil Dr. Moorehead, who, as he informs us, found him in his office complaining of an excruciating pain in the forehead, with a firm pulse. Dr. M. proposed blood-letting, but his patient objected, and the next day visited a patient in the country and several in the city. On the 14th he was worse and kept his bed most of the day. On the 15th he was lethargic, and another medical friend, Dr. Safford of Putnam, was called into consultation. As it is not our design to report his case in this notice, we shall only add, that on the morning of the 18th his symptoms were decidedly apoplectic, and that he expired at one o'clock.

A *post mortem* examination of the brain was made and disclosed an abcess in each anterior lobe of that organ, containing about an ounce of pus, with decided softening of the surrounding cerebral substance.

Referring to these manifest ravages of inflammation, Dr. M. remarks—"I cannot but regret the misfortune of not being able to prevail on my patient to permit the active treatment which I proposed on my first and immediately subsequent visits. Most of the symptoms except the cephalalgia, were of such a mild and obscure

character that he could with difficulty be prevailed upon to do any thing of an effective character. Physicians, generally, as far as my observation has gone, are unmanageable patients; and no class of men are more likely to deceive themselves. I doubt, however, whether any plan of treatment, adopted after I was called in, would have saved him, as his family inform me, that for some weeks previous to his being taken down, he frequently complained of headache, and that his memory was impaired. Thus, it would appear, there was a morbid action in his brain, for a considerable time before any treatment commenced."

In this opinion we concur, from having observed in visiting several patients with our deceased friend, that his memory of the symptoms and treatment of the preceding day was imperfect. To this enfeeblement of mind, the direct consequence of his cerebral disease, we may ascribe his error in refusing to submit to the only treatment which could have saved him.

On the day of his interment the physicians of Zanesville, and its vicinity, held a meeting of which Dr. Mitchell was chairman and Dr. Hildreth secretary, when the following preamble and resolutions were unanimously adopted:

"Whereas it has pleased the Almighty to remove from amongst us, and from the sphere of his usefulness, our late friend and brother practitioner, Dr. D. W. Rhodes: therefore,

"*Resolved*, That we view with deep regret this dispensation of Divine Providence, inasmuch as it has borne from us one, who has for many years stood so deservedly high in his profession; and who has been most indefatigable in his exertions to alleviate the sufferings of his fellow-men.

"*Resolved*, That in the death of Dr. Rhodes this community has sustained a loss, which will be most severely felt by those who in the hour of affliction, have so long relied upon his skill and judgment.

"*Resolved*, That we deeply sympathize with his bereaved family, in their painful and melancholy loss.

"*Resolved*, That in testimony of our regard for the deceased, we wear crape on the left arm for thirty days.

"*Resolved* That a copy these resolutions be presented by Dr. Moorehead to the family of the deceased, and that they also be published in the papers of this town.

"*Resolved*, That we adjourn to meet at the late residence of Dr. Rhodes, at the hour appointed for his funeral, and that we attend the same in body."

This is a merited tribute, and it is delightful to find it so willingly given by surviving brethren.

JOHN A. TURNER, M. D. A few weeks before the death of Dr. Rhodes, the profession and people of Zanesville had experienced the loss of another intelligent and honorable physician, Dr. Turner. He was a native of the valley of Virginia, where, in the memorable epidemic, autumnal fever of 1823, he experienced an attack, which left him with an enlarged spleen. From this resulted repeated attacks of intestinal hæmorrhage, followed at last by ascites, of which he died. We have a full history of his case taken from his own mouth, with an account of the autopsic appearances, communicated to us by Mr. Hazlett, a student of medicine, which presents so many points of interest, that we shall lay it before our readers in a future number. Dr. Turner was greatly beloved by his acquaintances, and died amidst the regrets of society. D.

MEDICAL AND PHYSIOLOGICAL COMMENTARIES. BY MARTYN PAYNE, M D., A. M.

We have received a copy of this work, which is one of the largest original publications on medicine that the American press has yet brought forth. An early review of it will be prepared by one of our ablest collaborators. Y.

AN INTRODUCTORY LECTURE, BY PROFESSOR LINDSLY, OF THE COLUMBIAN COLLEGE. *November*, 1840.

This Lecture, the subject of which is "Medical Science and the Medical Profession in Europe and the United States," is one of much more than usual interest and ability. The author of it shows himself to be a scholar, of enlarged and liberal views. We should like to see his Lecture in the hands of every student of medicine in the country. Y.

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